

Knowing what it is like to converse in L

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December 17, 2013

Knowledge of language is frequently advanced as an explanandum of empirical research in linguistics, in particular in the tradition of generative grammar.¹ With good reason: whether a linguist (working without informants) is in a position to formulate or assess a theory about a language *L* supervenes on whether the linguist knows *L*. By contrast, the physicist can work in any language, as can the historian (though the range of subjects might be limited by the availability of reliable translations of archival materials). What could explain this asymmetry, if not that the facts partly evident in the *L*-linguist's data, and which her theory states, just are her knowledge of *L*?

But what *is* knowledge of language? What distinguishes one who knows *L* from one who does not? This is *the question of metasemantics*: how we answer it bears powerfully on how we approach the empirical study of language, in ways to be explored.

The aim of this paper is the relatively ambitious one of answering the question of metasemantics in line with a conception of the psychological that, though storied and fruitful, has not to my knowledge intersected the generative grammar tradition; and thereby both resolving a long-standing puzzle (as well as a host of auxiliary perplexities) and mapping out an array of constraints on and prospects for future research in that tradition.

The puzzle is a deep incompatibility between the *semantical practice* of the generative tradition and its *official metasemantical theory*.²

The official metasemantics is Chomsky's (1965, 1975, 1986) 'cognitivism': knowledge of *L* is a capacity of the brain to manipulate a certain structured symbol system. According to cognitivism, 'generative grammar seeks to discover the mechanisms that are used' (Chomsky 2000, 17); research in semantics seeks

*Thanks to Jessica Wilson, Nate Charlow, Seth Yalcin, and Juhani Yli-Vakkuri. Thinking about Seth's work, especially Yalcin 2007 and Yalcin MS, has been particularly valuable for developing the ideas here. Bare page numbers are citations to Lewis 1983.

¹By linguists: Chomsky 1986; Heim 1982, 9; Larson and Segal 1995, 1.2; Everaert *et al.* 2010. By philosophers: Laurence 2003; Matthews 2006; Hornsby 2005, 111; Tsai 2010, 2011; Yalcin MS.

According to Ludlow (1999, 2.1), the subject is 'semantic knowledge'; and yet this is perhaps part of 'knowledge of I-language' (19). For Heim and Kratzer (1998, 1), the issue is 'knowledge of meaning'; but this may be part of (or grounded in) 'knowledge of English' (76).

Lewis occasionally speaks casually (in gesturing at data rather than in advancing explananda or explanantes) to 'knowledge of meaning': Lewis 1975b, 173, 182; Lewis 1970, 190. But Lewis's official view is that philosophical linguistics pertains to linguistic *practice*: 'We have made it part of the business of philosophy to set down the broad outlines of our common knowledge about the practice of language' (Lewis 1980, 22).

For criticism of knowledge of language as the subject-matter of linguistics, see: Pettit 2002; Rey 2003; Devitt 2006; Longworth 2008.

²This clash is barely subterranean in the dialectic of Cann *et al.* 2009.

the structure of certain brain symbols, the ‘semantic representations’ (9); any relations these symbols may have to referents or truth-conditions is of no interest (16–17).

An alternative metasemantics is Lewis’s (1975b) ‘conventionalism’: knowledge of *L* is social knowledge about the expectations of the *L*-community. These expectations involve knowledge of the truth-conditions of the sentences used in the *L*-community—thus Lewis’s famous attack on Katz and Postal (1964): ‘we can know the Markerese translation of an English sentence without knowing the first thing about the meaning of the English sentence: namely, the conditions under which it would be true. Semantics with no treatment of truth conditions is not semantics’ (Lewis 1970, 190). But for these purposes, cognitive structure is unimportant: ‘it does not matter whether [in language-use, the brain manipulates symbols]. We are concerned only to say what system of expectations a normal member of a language-using population must have. We need not engage in psychological speculation about how those expectations are generated’ (Lewis 1975b, 180–1). Nothing else could pin down semantic structure; so the ‘grammar’ generating the truth-conditions of *L* is of no interest (177–8).

Unfortunately, the semantical practice of the generative tradition seeks *structured truth-conditional semantic value assignments* (inter alia, Heim and Kratzer 1998, 13). Because structured, those can’t be about the conventionalist’s social expectations; because truth-conditional, they can’t be about the cognitivist’s brain

symbology. The puzzle then is: what *are* they about?³

The metasemantics I advance is based in ‘simulationism’ (Heal 2003):⁴ in effect, that our grasp of psychology is grounded in *consciousness*. Simulationism looks back to the pre-behaviorist *Verstehen* tradition in psychology (Dilthey 1988), recovering resources much less gingerly anti-behaviorist than Chomsky’s (1959) structured brain symbols or Lewis’s (1966) intentional attitudinal states. Consciousness displays both structure and intentionality, but also a great deal more, such as connections to self-knowledge, knowhow, and knowledge of others. These are therefore ‘off the shelf resources’ for metasemantics, which means that our official metasemantical theory need be little more verbose than its slogan: *knowing L is knowing what it is like to converse in L*.

Section 1 articulates the ordinary notion of knowledge of language in terms of a state with a certain role in explaining conversational success and failure. Section 2 criticises cognitivism, expanding upon David Lewis’s early complaints. Section 3 raises a large number of objections to conventionalism, primarily to get clear on desiderata for an adequate metasemantics. Section 4 introduces simulationist metasemantics, picking up threads from previous sections in passing.

Finally, in section 5, I turn to semantics. I argue that a semantic value assignment should be understood as *part of an instrument* for representing *phenomenological structures* associated with knowledge of language, and sketch ‘mindset semantics’, a

³The ‘indication’ or ‘tracking’ or ‘statistical’ or ‘causal’ metasemantical theories once popular in philosophy are hopeless: lacking any gesture at an explanation of composition, development of these theories has been confined to natural kind predicates—and, as Chomsky (2000) establishes (to my mind, anyway), the categories cut by ordinary language predicates simply crosscut natural categories.

⁴Other important influences, in addition to those works cited in the text, are Harman 1990 and Field 1994, and conversation with Peter Ludlow and Agustín Rayo.

framework for developing such instruments. Mindset semantics in effect hacks the Lewis-Kaplan-Stalnaker tradition by replacing each appeal to an *individual world* with an appeal to a *conversational scoreboard* (Lewis 1979) or ‘Stalnakean’ context (Stalnaker 1999). I finally consider Yalcin’s (MS) recent case for the autonomy of philosophy of language from philosophy of mind: that autonomy is incompatible with our metasemantics, so I argue that the real lesson is a need for greater articulation and sophistication in our apparatus for and understanding of the structures involved in linguistic interpretation.

The landscape emerging from simulationism is quite different from the one to which we are accustomed. By contrast with Yalcin, who worries that ‘metasemantic speculation is hazardous, and risks being idle’, and concludes that metasemantics is ‘probably best pursued at present simply by pursuing semantic theory’, the metaphilosophy here is less cautious, more encouraging of interference in the activities of other departments. It is, of course, ultimately *results* that will settle this issue. Still, I do feel research in the human sciences must clean out all vestiges of behaviorism if we are to understand ourselves; and I hope the potential for novel first-order results will excuse the arrogance of second-order meddling.

1 Common knowledge of language

Knowledge of language is a familiar notion of everyday psychology. We rely on facts about our own knowledge of language and that of others when planning or preparing ourselves for trips; if we are multilingual, we rely on assumptions about the knowledge of language of others in choosing ways to express ourselves; if we find ourselves in circumstances where we know no common language with those around us, we remain mute or attempt only nonlinguistic communication. More generally, knowledge of language is crucial in explaining conversational success and failure, as well as the many differing forms taken by conversational success.

Here are examples to illustrate the explanatory value of knowledge of language. Assume Fred and Sam commonly know English,⁵ while Horst and Ute commonly know German, and that each is monolingual:

Success: English

In the presence of a salient goat *g*, Fred asks Sam ‘is that a goat?’ Sam replies ‘that is indeed a goat’. Common knowledge that *g* is a goat results.⁶

Success: German

In the presence of salient goat *g*, Horst asks Ute ‘ist das eine Ziege?’ Ute replies ‘das ist ja eine Ziege’. Common knowledge that *g* is a goat results.

Failure: English

⁵Namely, each knows that each knows that each knows . . . English.

⁶Namely, each knows that each knows that each knows . . . that *g* is a goat.

In the presence of salient goat g , Fred asks Ute ‘is that a goat?’ Ute stares blankly.

Failure: German

In the presence of salient goat g , Horst asks Sam ‘ist das eine Ziege?’ Sam stares blankly.

Explananda here are why Sam (Ute) makes her assertion in the success but not the failure case, why Fred (Horst) forms the belief after the assertion that g is a goat, and why this belief is also common knowledge. The stipulated patterns of knowledge of language make the scenarios unsurprising, makes their reactions intelligible; by contrast, swapping Sam’s and Ute’s knowledge of language makes the scenarios surprising, the reactions *prima facie* unintelligible. So the patterns of knowledge of language are part of the explanantes.

To characterize knowledge of language more sharply, let us unfold the explanatory structure in further detail. In *Success: English* (and, in parallel, *Success: German*), granting common knowledge that their present context is c^* , the common knowledge that g is a goat results from common knowledge of each of the following:

1. *Common interpretation*

- (a) If Sam asserts ‘that is indeed a goat’ against c^* , Sam believes at the time of c^* that g is a goat
- (b) If Fred is audience to an assertion of ‘that is indeed a goat’ against c^* , Fred believes following c^* that g is a goat

2. *Common recognition*

- (a) Sam asserts ‘that is indeed a goat’
- (b) Fred is the audience to an assertion of ‘that is indeed a goat’

For if (1) and (2) are common knowledge, so are:

- 3. (a) Sam believes at the time of c^* that g is a goat
- (b) Fred believes following c^* that g is a goat

Because what is known is true, it is common belief after c^* that each believes that g is a goat. We assume without argument that together with common knowledge that Sam’s belief regarding the question is knowledge, this makes for common knowledge of Fred’s knowledge, and therefore for common knowledge that:

- 4. g is a goat

Along the way, we picked up an explanation of (3b). And the general frame allows us to extract an explanation of Sam’s assertion. Because the explanation follows a priori from (1) and (2), because Sam knew (1) and (2) and took the identity of their context to be common knowledge, she knew that were (2) to be common knowledge, common knowledge of (4) would result; because Sam wanted more than anything to create common knowledge of (4), she therefore had conclusive reason to make (2) common knowledge;⁷ and she knew that uttering ‘ g is a goat’ just then was her easiest way to make (2) common knowledge; so she had conclusive reason to utter ‘ g is a goat’ just then.

⁷Assuming no easier route to common knowledge of (4) existed, of course.

Now to *Failure: English* (and, in parallel, *Failure: German*). To isolate the importance of knowledge of language, grant Fred and Ute common knowledge that Ute knows but Fred does not know whether *g* is a goat and that both Fred and Ute want (more than anything) it to be common knowledge whether *g* is a goat. Nevertheless, where Sam speaks up, Ute stands silent. Why? Presumably because no knowledge common to Fred and Ute analogous to the conjunction of (1) and (2) is available. More specifically, there is no sentence *s* Ute knows how to assert which is commonly interpreted: for which it is common knowledge that

5. (a) If Ute asserts *s* against *c**, Ute believes at the time of *c** that *g* is a goat
- (b) If Fred is audience to an assertion of *s* against *c**, Fred believes following *c** that *g* is a goat

If not, there is no assertion she knows how to perform such that, conditional on Ute's having performed it, she can derive a priori her and Fred's common knowledge that *g* is a goat. Without conclusive reason to perform any assertion at all, she stands mute.

Conversation can fail even when common interpretation is in place: sometimes there is ignorance of the context, as when the audience cannot identify a demonstrandum or a presupposition has been forgotten; common recognition is blocked when it is too loud or the audience is too distracted or the speaker mumbles; when an assertion is mistaken for play-acting. Arguably, common knowledge does not result when the audience has 'Gettier knowledge' of which speech act was performed, so that there is common belief

⁸See the works cited in footnote 1.

without common recognition. But we do not regard common interpretation without common recognition as lack of common knowledge of language.

So common interpretation of a wide range of sentences of *L* against a wide range of contexts between subjects seems to be both necessary and sufficient for common knowledge of *L* between them. But this does not cut common recognition out of the picture. For when there is common knowledge of language, we expect the availability for common recognition of a wide range of speech acts using sentences of *L*: which will if appropriate be performed intentionally (and therefore knowingly) and recognized by audiences as having been performed. When not, this requires special pleading (it was too loud, or one side was gobsmacked).

Common knowledge of *L* therefore *is coextensive with* common interpretation of a wide range of speech acts using sentences of *L* against a wide range of contexts, and in turn *explains* the availability of such for common recognition (and intentional performance).

2 Cognitivism

Which is prior: *common* knowledge of *L*? Or knowledge of *L simpliciter*?

According to the standard view in linguistics, the latter *individual* phenomenon explains the former *collective* phenomenon.⁸ With some plausibility: for individual knowledge of *L* at least appears to be autonomous of collective knowledge of *L*. As we have

just seen, common knowledge of L requires the knowledge by each how to perform speech acts in L . But performing speech acts in one's language is typically a solitary exercise: most language use is not in dialogue but in inner monologue, in thinking or calculating. Presumably whatever goes on in inner monologue is dissociable from any social facts; so the knowledge how to engage in it cannot rely on common knowledge of language. Accordingly, individual knowledge of language at least exists, and is *prima facie* at least a topic worthy of study. And indeed it is a better candidate than collective knowledge of language the subject-matter of linguistics: when the solitary linguist at her desk considers a sentence of her language for purposes of accumulating data, she does not think about what anyone else thinks about the sentence—she just thinks about the sentence. (Whether common knowledge of L can be based on individual knowledge of L remains to be seen, of course.)

According to the standard view in linguistics, individual knowledge of L is knowledge of a 'theory for L '. A 'theory for L ' includes at least a *semantic* theory for L , alongside presumably other components—at least a *phonological* theory, and perhaps also a *syntactic* theory and a *pragmatic* theory (if these are not folded into the semantic theory), and perhaps other components still. Our focus will in the main be on *semantic* knowledge of L , or knowledge of *meaning* in L , so we will typically speak just of *knowledge of L* or *a theory for L* , with this qualification in mind.

A semantic theory (a 'semantics') is a partial description of a mathematical object of a certain kind, a *semantic value as-*

signment: bracketing various sources of complexity, a function $(\lambda d)\llbracket d \rrbracket_{\mathcal{L}}$ from expressions into entities of some sort. When $\llbracket \xi \rrbracket_{\mathcal{L}} = x$, we say 'the \mathcal{L} -semantic value of ' ξ ' is x '. We customarily omit quote marks inside semantic value brackets, writing instead just $\llbracket \xi \rrbracket_{\mathcal{L}}$.

Consider then the crudest version of the hypothesis that the content of knowledge of L is the content of a description of a semantic value assignment for L : if $(\lambda d)\llbracket d \rrbracket_{\mathcal{L}}$ is in some sense 'for L ', knowing L is knowing, for every expression d of L , the value of $\llbracket d \rrbracket_{\mathcal{L}}$.

Even setting aside what 'for L ' amounts to, the proposal is too weak. Perhaps contents are truth-conditions, or 'Stalnakean propositions'. But then, the content of every true claim of mathematics is just the trivial 'necessary proposition'; in which case if only *implicit* knowledge is required, everyone knows every language. Even if *explicit* knowledge is required, knowledge of mathematical facts remains too 'exoteric', too easily attained, to count as knowledge of language. I could not learn Japanese just by reading, and learning the content of, a textbook stating a theory of Japanese. After all, knowledge of Japanese requires knowledge how to perform and recognize speech acts in Japanese, which cannot be imparted just through book-learning.

But excessive strength threatens other options. *Explicit* knowledge of the semantic value assignment for our language under any reasonably articulate descriptive mode of presentation is not possible. Indeed, none of us even have *accessible* knowledge of the semantic value assignment for our language under any reasonably articulate descriptive mode of presentation (lest linguistics be too

easy). Two options remain: merely accessible knowledge under a mode of presentation that is not especially articulate but is yet ‘esoteric’; merely implicit knowledge under a perhaps articulate, but either way esoteric, mode of presentation.

For reasons I find unclear, the tradition has been polarized toward articulate modes of presentation: knowledge of L is knowledge under an articulate mode of presentation of a description of $(\lambda d)[[d]]_{\mathcal{L}}$, the semantic value assignment for L . This knowledge must therefore be merely implicit. But it must also be very difficult even to make explicit, and therefore not in any reasonable sense accessible: it must be *deeply* implicit.

The tradition has interpreted this deeply implicit knowledge under a nonetheless articulate mode of presentation within the ideology of ‘cognitivism’. This ideology postulates *brain languages*, where:

6. When B is a brain language,

- (a) One way for an event of assertion (or a state of acceptance) of a sentence s of B to occur is for a neural event (or state) of type $\{s\}_B$ to occur in a human brain
- (b) When an event of type $\{s\}_B$ occurs in Fred’s brain, Fred has (at least) deeply implicit knowledge of the content in B of s

Exploiting cognitivism, the tradition states that, for a certain brain language B , when \mathcal{L} is a semantic value assignment for L , for some set S of sentences of B such that the content of $\bigwedge S$ in B describes

\mathcal{L} , Fred knows L just when, for $s \in S$, $\{s\}_B$ occurs in Fred’s brain. That might be enough to explain what it is for \mathcal{L} to be ‘for L ’: it is for L to be the language used by those who know \mathcal{L} . And because reading the Japanese textbook could not get the description of the semantics for Japanese written in the brain language, the problem of exotericism goes away.

The approach raises several obvious questions:

- 7. (a) What is it for a neural event to realize a state of accepting a sentence?
- (b) Which brain language B is behind knowledge of language?
- (c) Which sentences of B realize knowledge of a given language?
- (d) Doesn’t this just move the bump in the carpet, shifting the question of metasemantics from ordinary language to brain language?

The first three are perhaps technical questions to be worked out along the way; by contrast, pending an answer to the fourth, the interest of the approach may be threatened.⁹

The criticism of this cognitivist approach I find especially compelling, however, is advanced by David Lewis (178–81). He discusses ‘the hypothesis of internally represented grammars’: in effect, our semantic value assignment \mathcal{L} is a *grammar*, while our set S is an *internal representation* of that grammar, dismissing it on the grounds of the ‘irrelevance’ to matters of ‘concern’ of

⁹This may well be central to Chomsky’s abandonment of truth-conditional semantics, as discussed on page 2.

‘unconscious’, ‘inaccessible mental states’ to ‘explaining’ the ‘rational’ ‘expectations’ of the ‘normal language-user’—as distinguished from the ‘small child’, who may both have an internally represented grammar and use language by mere ‘habit’.

In our dialectic, the ‘concern’ to which cognitivism is ‘irrelevant’ is making Sam and Fred’s common knowledge of English relevant to their common knowledge of (1), *common interpretation*—which must be at worst *accessible* knowledge. If (1) is accessible common knowledge, Sam accessibly knows (1b) about Fred and Fred (1a) about Sam—but Sam knows nothing about Fred’s internally represented grammar and Fred nothing about Sam’s, so the *knowledge* of either about internally represented grammar could explain nothing. And moreover, common accessible knowledge of (1) requires Sam to accessibly know (1a) about herself and Fred (1b) about himself. But neither knows anything about their own internally represented grammars except, at best, deeply implicitly. This deeply implicit knowledge may be a *cause* or a *realizer* of the required accessible knowledge—and of course it may also not be. But its deep implicitness would seem to forestall its being a *rationalizer* of the accessible knowledge. Indeed, Lewis’s speculations about young children suggest that the deeply implicit knowledge is compatible with the *absence* of appropriate accessible knowledge. The alleged deeply implicit knowledge is apparently orthogonal, then, to the requisite accessible knowledge. If so, cognitivism sheds no light on the question of present concern.

3 Conventionalism

3.1 ‘Languages and language’

The problem of exotericism is what pushed the tradition toward cognitivism. Lewis resolves it in a different way: rather than knowledge of a semantic theory for L , knowledge of L is knowledge *about* a semantic theory for L . This knowledge is contingent and a posteriori; moreover, it requires certain commitments from one that cannot be adopted simply through book learning. But because the commitment is part of a collective *commitment*, common knowledge of L is prior to individual knowledge of L .

The central doctrine of conventionalism is that knowledge of L rationalizes performing and interpreting speech acts because it is the individual’s take on collective common knowledge of a certain stable equilibrium solution to a coordination problem about which system to use in communication. More specifically, a population P uses L just if for a semantic theory \mathcal{L} for L , a collective interest in communication among P sustains a convention—a commonly known reasonable optional collective regularity—to be *truthful* and *trusting* in \mathcal{L} (Lewis 1975b): to ‘utter’ s against a context c only if one believes $\llbracket s \rrbracket_{\mathcal{L}}^c$ and to believe $\llbracket s \rrbracket_{\mathcal{L}}^c$ if witness to an ‘utterance’ of s against c .

So in particular, P is conventionally truthful and trusting in \mathcal{L} just when each member a of P iteratively implicitly knows (the content of) (8):

8. It is common implicit knowledge among the members of P that, though the members of P could do otherwise, the mem-

bers of P habitually and to collective benefit through communication (i) ‘utter’ s against c only when they believe the content \mathcal{L} assigns s against c and (ii) when audience to such an episode, believe that content

Or, more strictly, iteratively knows the content of (8) evaluated relative to P : ‘the members of P ’ must be read *de re* (so that, in particular, a identifies herself as among the members of P).

Knowledge of (8) is a good candidate for conventionalist knowledge of ‘ P -lish’, the language used in P . So for conventionalism, common knowledge of L is therefore prior to individual knowledge of L . The problem of exotericism is resolved without appeal to deeply implicit knowledge: reading a textbook about the semantic theory for Japanese won’t give one common knowledge that one is a member of a population in which truthfulness and trust in that semantic theory is conventional—for that, common knowledge in the population that one is a member of the population is required, which (*inter alia*) requires one to commit to conformity to truthfulness and trust in that semantic theory.

We will return to the conventionalist’s difficulties in explaining common recognition—Fred and Sam’s common knowledge of (2)—in section 4.2. But it is straightforward to get from (8) to common interpretation (common implicit knowledge of (1) between Fred and Sam, and lack of comparable common knowledge between Fred and Ute)—details are suppressed.

(Note however that, while it is necessary for conversational success that the conversants have common knowledge of a language, it is not necessary for this that knowledge of language be

itself a kind of common knowledge. In this respect, the conventionalist proposal that knowledge of language is knowledge of (8) is overkill. So long as it is relatively easy to generate common knowledge of language, each can treat the other’s knowledge of language as a ‘black box’, allowing the knowledge of language of each to be as individualistic as one might like.)

We now canvas a number of objections to conventionalism.

3.2 The unimportance of coordinating language use

According to Lewis, R is a convention in P only if (A) R is ‘optional’: (i) for certain alternatives R_i to R , collective conformity of P to R , or to any of the R_i , is equally good for the members of P ; (ii) each member of P knows how to conform to R and to all of the R_i ; (B) collective conformity to just one of the alternatives is better than scrambling things up.

Unfortunately, there seems to be no circumstance where settling on a particular language meets both (A) and (B):

9. (a) Mo and Ro are both monolingual in English: neither knows how to use any other language, so (A-ii) is not met
- (b) Mo and Ro are both bilingual in English and German: there is no disadvantage to dividing the languages (so that Mo is truthful and Ro trusting in English, while Ro is truthful and Mo trusting in German, or to both using a patois), so (B) is not met

- (c) Mo is bilingual in English and German, Ro in English and Hixkaryana: English is the only language both know how to speak, so (A-ii) is not met
- (d) Mo speaks only English, Ro speaks only German: no collective linguistic activity, so irrelevant
- (e) Mo and Ro both speak English, Mo and Ro both know semaphor (which is much less efficient than English and cannot be used for communication within earshot because the flags are dangerously large): semaphor is worse, so (A-i) is not met

So there is no basis in the ordinary diversity of languages for the central doctrine of conventionalism, that the rationalizing power of knowledge of language is the rationalizing power of membership in a convention.

Perhaps the diversity of *possible* languages requires coordination? Recall that the English semantic value of φ is the complement of the Knoh semantic value of φ (Kaplan 1977/1989):

- 9. (f) Mo and Ro are both bilingual in English and Knoh: here scrambling up vocabulary would lead to extensive confusion, so (B) is met; we stipulate that (A-ii) is met; and surely (A-i) is met.

Perhaps it is medically impossible for humans to learn Knoh, so as far as human language is concerned, (A-ii) is not met here. Even if not, there are ways to eliminate the risk of confusion beyond conventionally securing a regularity of exclusive truthfulness and trust in *English* or in *Knoh*. We could instead conventionally secure a

regularity of only *exercising knowledge of English* when the right hand is raised and only *exercising knowledge of Knoh* when the left hand is raised. That is compatible with knowledge of either language being distinct from (8).

3.3 What knowledge of language isn't like

3.3.1 It isn't a posteriori

According to Lewis, 'each believes a convention of truthfulness and trust in £ prevails because of his experience of others' past truthfulness and trust in £' (167). Which language is being spoken is therefore *a posteriori*: a matter we can grasp while reasonably remaining uncertain. A posteriority seems necessary for Lewis's solution to the problem of exotericism. Unfortunately, it runs smack into cardinality worries.

A context sensitive language is a partial function from sentence-context pairs to propositions. Where \mathcal{L} is the set of context-sensitive languages, S the set of sentences, C the set of contexts, and W modal space, the cardinality of the set of languages is as follows:

$$10. |\mathcal{L}| \geq (2^{|W|})^{(2^{|W|} \times |C|)}$$

After all, if the cardinality of modal space is $|W|$, the cardinality of the set of propositions is $2^{|W|}$. Let C be the set of contexts and S the set of sentences. Then $|\mathcal{L}| = (2^{|W|})^{(|S| \times |C|)}$. If sentences are just types of objects, then sentences are just properties. Letting J be

the set of possible individuals, the cardinality of the set of properties is $2^{|J|}$. According to Lewis, any possible region of spacetime is filled exactly by an object; so $|J| \geq |W|$; so $|S| = 2^{|J|} \geq 2^{|W|}$.

From (10), a posteriority leads to reductio along two paths.

First, if which language is being spoken is a matter of a posteriori uncertainty, then eliminating all a posteriori uncertainty would eliminate uncertainty about which language is being spoken. But it follows from (10) that $|\mathcal{L}| \geq (2^{|W|})^{(2^{|W|})} \gg 2^{|W|}$ (the last inequality by Cantor's theorem). So there are more (indeed, vastly more) languages than propositions. But the propositions are equinumerous with the possible states of a posteriori uncertainty (measuring such states is just what we invented the propositions for, after all). So eliminating all a posteriori uncertainty can fail to eliminate uncertainty about which language is being spoken—contradiction.

Second, according to Stalnaker's empirically fruitful conception of context (Stalnaker 1999), a context includes the common knowledge of the conversants: if so, if for some range R of possibilities among which the conversants may be uncertain, $|C| \geq |2^R|$. Conversation obviously requires common knowledge of which language is being spoken. But then if which language is being spoken is a matter about which there may be uncertainty, $|C| \geq 2^{|\mathcal{L}|}$. But then by (10), $|C| \geq 2^{(2^{|W|})^{(|S| \times |C|)}}$ —which, by Cantor's theorem, is impossible.

The reductios can be blocked in various familiar ways by monkeying with the apparatus—apparatus which is tried and true, very well-motivated, and widely applied, and so to be monkeyed with as a last resort.

3.3.2 It isn't social knowledge

Ignorance of (8) does not suffice for ignorance of language: conventionalism *overshoots* in treating the problem of exotericism.

3.3.2.1 Divided populations The Hatfields and the McCoy's are extremely mistrustful of one another: no one on either side believes themselves to be part of a convention including anyone on the other side. Accordingly, there is no P including both a Hatfield and a McCoy such that for any \mathcal{L} , any Hatfield or McCoy knows (8) pertaining to P and \mathcal{L} . Therefore, according to the conventionalist, for no P do any Hatfield and any McCoy both know P -lish.

But of course they all know English. They use it, for example, to holler insults and threats across the valley, such as 'you hornswoggin' McCoy's are gonna git it once we make bail for Pappy Hatfield'. The McCoy's understand perfectly well what this means—however unconcerned about gitting it or doubtful about their own hornswogging they may be.

3.3.2.2 Soliloquy I know (my own idiolect of) English. I use it to think in quite a lot (cf. Harman 1975). That I do so, and what I thereby think when I do—about these matters, I am as certain as anything. This certainty persists through my denial that most who know English use it optionally. This certainty would persist even through a spell of paranoia, in which I fear that all other English speakers might have (a) forgotten about me de re (b) come to doubt whether I believe myself to be part of a linguistic convention with them (c) have reconvened without me around truthfulness and

trust in K_{noh} (d) have resolved not to accept any proposition I assert. Lewis's complaint against cognitivism—'the analysandum clearly could be true although the analysans was false' (177)—applies equally against conventionalism.

Lewis's treatment of 'Robinson Crusoe', keeping a diary alone on his island, as in a convention with his past and future time-slices, does not assist the conventionalist. For it suffices for common knowledge of (1) that there is common knowledge that each knows English. Robinson Crusoe knows his language *solipsistically*: without involvement in collective common knowledge of any language. His language could be English. Without some argument against the possibility of common knowledge of solipsistic knowledge of English—and Lewis doesn't provide one—there is no argument that common knowledge of language is prior to individual knowledge of language.

3.3.3 It isn't 'intellectual' knowledge

Knowledge of (8) does not suffice for knowledge of language: conventionalism also *undershoots* in treating the problem of exotericism.

Knowledge of English requires knowledge how to cast one's mental states into English-language speech acts.¹⁰ On the side of the audience, knowledge of English requires knowledge how to entrain with English-language speech acts performed by others. But while iterative knowledge of (8) generates *reasons for performing and following speech acts*, it is dissociated from knowledge how

to perform or follow those speech acts—how to respond to those reasons.

This is a general difficulty with the philosophy of action Lewis presupposes: an action is a course of behavior set in motion by an appropriate pairing of belief and desire or pattern of credence and value. In Jeffrey's classic example, the guest stopping by the wine store on the way to dinner has credence divided between beef and chicken, and a certain value to drinking white wine versus red with each meat: take the credence-weighted average of the values for each wine option, and the higher valued option is the reasonable one. But my *desiring* or *valuing* a certain outcome is entirely divorced from my knowledge how to bring it about: I very much desire and value world peace but have no idea how to bring it about. Similarly, the dinner guest might be underage or out of cash or otherwise in a position from which they are ignorant how to acquire either wine.

Knowhow cannot be acquired by convention—only by training. Acquiring knowledge how to be truthful and trusting in any given £ is extraordinarily taxing, so much so that most are unlikely to do it very many times, most will cluster with others with similar knowhow, most will impute similar knowhow in their children, and so forth. So knowhow *obviates* convention.

Lewis elsewhere (1988, 288) affirms a mistaken conception of knowhow as *mere ability*; his attack on cognitivism may well therefore have been intended as a clipping rebuttal on the current line of attack. But while knowhow *bestows* ability, it is distinct from ability. For ability does not rationalize: my ability to balance

¹⁰In this I agree with Hornsby (2005); but I disagree that knowledge of language involves no 'factual' knowledge.

a 12 stone load has no rationalizing power. By contrast, knowhow does rationalize: if purchasing red has the highest expected value, we anticipate purchasing red just when there is knowledge how to do it.

3.4 Instrumentalism about grammar

Antisubsententialism is the doctrine that knowledge of language is independent of knowledge of the meanings of subsentential constituents.

Conventionalism leads straight to antisubsententialism (178): conventions of language care only about sentence-meaning: ‘internally represented grammar’ is, as we have seen, irrelevant. Moreover, ‘Tarski’s Convention T and its relatives will not help. Since the tribe’s language is not the same as our metalanguage for it, the only versions of these principles that apply are the ones stated in terms of translation’ (256): when the semanticist describes the semantic theory for an alien language, grammatical determinacy cannot be secured through ‘disquotation’; and it would be the height of arrogance for the semanticist to assume that her language is alone in requiring knowledge of grammar.

Instrumentalism about grammar is the doctrine that only theory-internal considerations are relevant to deciding among claims about ‘grammar’ aka subsentential semantics.

Antisubsententialism leads straight to instrumentalism about grammar for the theory of knowledge of language: general theoretical considerations are too few and weak to single out a unique grammar (258, 260); even supposing all but one candidate gram-

mar for *L* is needlessly complex, judgements of simplicity are subjective (177, 256)

But linguistics ordinarily purports to be about knowledge of language. And in its practice, facts about sentential truth-conditions are mere *data*: the theory to be extracted from the data—the quarry, the topic of interest—describes the *grammar* of the subject-matter (otherwise, why would ‘compositionality’ be widely accepted as an objective of such theories?). Linguistics cannot have both its self-image and its aim if conventionalism is true. But we have defended its self-image, and theories presented as part of its aim seem to show something.

3.5 Against truth

Why postulate propositions as objects of belief? The following argument may exert a deep tissue influence. Belief is both *rational* and *potentially false*; that combination requires a theory of belief to postulate propositions as its objects.

If belief is *rational*, a theory of belief cannot confine itself to the ‘brutely material’: states of the brain, ‘ecological’ states of the animal in its environment, language-independent sentences somehow in the brain or the ecology, dispositions pertaining to such things, and so forth. After all, the same belief state can be realized by an indefinite range of brutally material states, so that any theory confined to a list of such states would both miss generalizations and include irrelevant detail. What unifies the many realizers of belief that horses eat hay is their common ‘intentionality’, their somehow ‘pertaining to’ the eating of hay by horses: a unity left

out by the list of realizers. Moreover, to this unifying element, any internal part of the realizer is simply irrelevant: *as* a belief that horses eat hay, the internal aspect of such a state is of no concern (182).¹¹

Granting that belief is intentional, a theory of belief still cannot confine itself to the ‘actual’: facts, obtaining states/events that occur, parts or aspects of the actual world, and so forth. For some believe that goats eat cans; and it is not a fact that goats eat cans, no event of a goat eating a can ever occurred, the actual world has no part in which a goat eats a can, and so forth. And false belief cannot be *objectless*: that would equate the clearly distinct beliefs that goats eat cans and that horses do not eat hay.

Fortunately, the *propositions* that goats eat cans and that horses do not eat hay are distinct. And propositions mark exactly the joints among the belief states that are there to be marked. So a good theory of belief would use propositions as its objects.

Unfortunately, anything we know about propositions has it that they encode *truth-conditions*. So if we then go on to use propositions as building blocks in our theory of knowledge of language, we can use propositional truth and the semantic-value assignment to define sentential truth. But that gives us a non-‘deflationary’ theory of sentential truth;¹² such theories avoid the liar paradox only at the cost of great complexity; and, *prima facie*, we are not so smart that our knowledge of language could rest on our grasp

of a theory of great complexity.¹³

We return to this theme in section 4.1.3.3.

4 Simulationism

The slogan of simulationism as a metasemantical doctrine is that knowing *L* is knowing what it is like to converse in *L*. Simulationism therefore treats individual knowledge of *L* as prior to common knowledge of *L*. The link to what it is like locates Sam’s knowledge of (1a) in a ‘disquotational’ link between assertion and belief known on the basis of knowledge of what it is like to assert sentences. The self-revealing character of consciousness makes this knowledge accessible and frequently even explicit, if inarticulate. Knowledge of what it is like is famously esoteric (think of Black-and-White Mary): in the present case that amounts to the esotericism of *the identities of sentences*. Individual knowledge of what assertion is like is promoted to knowhow by way of a general link between knowhow and knowledge of what it is like. This is in turn promoted to audience knowledge, like Fred’s knowledge of (1b), by way of *entrainment*, a general-purpose capacity in social consciousness; a general association between entrainment and common knowledge promotes speaker and audience knowledge to common knowledge.

¹¹Obviously there is also the ‘Kripkenstein’ worry about ‘normativity’ (Kripke 1982). The simulationist treatment of this issue is suggested in our discussion of (11d).

¹²Glanzberg (2003) argues that deflationary theories recognizing propositions cannot be adequately ‘divisive’ and that every theory must recognize propositions: the latter claim is challenged in section 4.1.3.3.

¹³Reading Glanzberg 2004, I for one drove into the ditch at the following sentence: ‘In the following, I shall assume familiarity with the fundamental works [on definability theory] of Barwise and Moschovakis’.

4.1 Metapsychology

A *metapsychological* theory pertains to our ‘understanding’ of psychology; more specifically, a theory which addresses the following questions:

11. (a) What is it to know the essence of a psychological property?
- (b) In what does one’s self-knowledge consist?
- (c) In what does one’s knowledge of other minds consist?
- (d) What is the structure of a rationalizing explanation?

The fundamental doctrine of *simulationism* (as I implement it) is that knowing the essence of a psychological property F —knowing what F is—is knowing what having F is like.¹⁴

Why believe it? The competition is *functionalism* (Lewis 1966), according to which knowing the essence of a psychological property is having stipulated ‘folk psychology’, a system of sentences linking the full family of psychological properties to varieties of ‘sensory stimulation’ and ‘behavior’. It is critical that these latter categories be nonpsychological, lest the psychological lose its explanatory moorings to the physical. But functionalism is

in a bind: we have no ordinary concepts of nonpsychological behavior, so we cannot have stipulated a theory involving them; our only conceptions in the neighborhood are concepts of *action*, and those are psychologically loaded (compare Lewis 1994, 300–1). Functionalism requires we have what we might call *display concepts* drawing on features of concepts of both action and behavior: familiar and linked to the rest of psychology like concepts of action; depsychologized like concepts of behavior. But there are no such concepts: display is a myth. Functionalism therefore rests on a myth; and I know no competitor other than simulationism.

4.1.1 Knowledge of psychological properties

Concerning (11a): simulationists say that knowing what it *is* to believe that φ , wonder ω , intentionally be Γ -ing, or intend Fred to Γ is knowing what it is *like* to believe that φ , wonder ω , intentionally be Γ -ing, or intend Fred to Γ .¹⁵ What is it like to believe that goats eat cans? Like this: goats eat cans..¹⁶ What is it like to wonder whether goats eat cans? Like this: do goats eat cans?..¹⁷ What is it like to be intentionally running around the block? Like this: run around the block!..¹⁸ What is it like to intend Fred to open the door? Like this: Fred open the door!. (Henceforth I will ignore other-directed command and intention, confining discussion of the

¹⁴What that may have to do with any ‘phenomenal characters’ or ‘qualia’ is a matter to be settled by theorists who believe in them—or, preferably, not at all.

¹⁵Convention: ‘ φ ’ ranges over declarative sentences; ‘ ω ’ over interrogative sentences; ‘ Γ ’ over uninflected action verbs; ‘ α ’ over imperative sentences.

¹⁶Convention: sans serif type is used to encode contents the reader is intended to pretend to endorse within consciousness. So when I say it is like this: goats eat cans., I mean for you to imagine being someone for whom the world is such that goats eat cans. You don’t need to let any particular words run through your head, or find any particular ‘quale’ or ‘phenomenal property’, whatever that may amount to.

¹⁷What is that like? Contrast what it is like for Fred before and after learning that g is a goat.

¹⁸Here we are to imagine being both the giver and acceptor of the command. What is that like? It’s what it is like for someone who is intentionally running around the block, of course.

practical side to self-command and intentional action.)

A conceptual worry: obviously we speak of attitudes outside of consciousness. I return to a potential objection based on this observation under (11d).

A technical worry: to generalize, we need to link the subject of the psychological verb with the statement of what it is like; but the statement of what it is like does not mention any subject—it just says *it is like this*: σ . We resolve this by *relativizing* (we return to what the relativization means under (11c)). Another: sans-serif type involves ‘total projection’ into the view of the other: imagining what it was like for Churchill at a certain moment t^* in 1940, I think it was like this: I am giving a rousing speech. But the belief I ascribe is that *Churchill himself was just then at t^** giving a rousing speech. We resolve this by adjusting indexicals: for a given assessor, $\|\sigma\|$ in the scope of a psychological ascription to one at t is substituted with a sentence with, for the assessor, the content of σ against one’s context at t .¹⁹

The general truths of essence about belief, wonderment, and intentional action/other-directed intention are then these:

- Sim-I. (a) One believes that $\|\varphi\|$ just if relative to one, it is like this: φ ²⁰
- (b) One wonders $\|\omega\|$ just if relative to one, it is like this: ω

- (c) One intentionally $\|\Gamma\|s$ ²¹ just if relative to one, it is like this: Γ

These schemata expand out to lists of truths of essence. They are evidently not ‘necessary a posteriori’-type truths of essence, so their contents are implicitly known broadly. Perhaps not so broadly as the contents of logical truths, though, which are arguably known implicitly by all rational beings.

Rather, the contents of (Sim-I) are known only to those who grasp them; and arguably grasp of these contents is not universal. Black-and-White Mary does not know what it is like for something to look red to one, and therefore also does not know what this is like: that (going by looking) is that color (namely red). That ignorance is most plausibly regarded as incomprehension: failure to grasp the content of the relevant instance of (Sim-I-a). The incomprehension is typically only partial, of course: Black-and-White Mary knows *a great deal* about what it is like for something to look red to one—that it involves looking at something, just to start with. It will be helpful to have terminology for knowledge of essential truths about varieties of consciousness based in having undergone them (or knowing how to imagine undergoing them) to *expand* our familiar categorization into knowledge a priori and knowledge a posteriori: we call it knowledge *a praesentibus*.

These schemata known a praesentibus are, of course,

¹⁹The appeal to *content* here is a mere convenience: the underlying fact is that I treat *that man*—Churchill—and *that moment*— t^* —as if objects of my and Churchill’s joint attention. Having done so I am free to swap out terms referring to these objects of attention that carry misleading presuppositions when I use them in favor of terms that do not.

²⁰Convention: schematic letters in upright Greek range over appropriate-category expressions set in sans serif type.

²¹When I intend myself to Γ , where Γ is a simple unconditionalized action predicate, I *am Γ -ing*: perhaps badly, perhaps ‘offline’, perhaps inattentively, perhaps slowly—but Γ -ing I nevertheless am.

schemata. Permissible substituends are sentences of the language of *you, the reader*. (Perhaps one day this essay will be translated to Hixkaryana; if so, the frames in (Sim-I) will contain only words of Hixkaryana, and when the schematic letters are substituted with sentences of Hixkaryana, the resulting instances will make sense to a Hixkaryana-reading audience and will express to them what I now express to an English-reading audience.) That is because the simulationist's aim is to elucidate to her audience their own implicit understanding of psychology: for that purpose, any language less extensive would cut too coarsely, and any language more extensive would cut too finely.²²

Much of the time, when I know a praesentibus that φ , my default assumption is that so too do those I encounter in the sorts of circumstances which engendered this knowledge a praesentibus in me. Presumably others do as well. Presumably we recognize this fact about ourselves collectively. Accordingly, if Mo and Ro encounter one another in circumstances which engendered in each knowledge a praesentibus that φ , it is *common knowledge* between them that φ .

²²Is it a problem that if Black-and-White Mary is the audience, the poverty of her language regarding color demonstratives leaves truths of essence *we* recognize unexpressed by (Sim-I)? Not obviously: for Black-and-White Mary knows also that looking at a red thing is determinately some way she does not comprehend. So she may regard it as having a genuine nature, present as an unrealized regulative ideal of full comprehension.

²³Left-to-right: the following is essential to its being like this: σ —namely, that it is like this: it is like this: σ . That is what it is like to believe that it is like this: σ ; so when it is like this: σ , one believes that it is.

Right-to-left: the following is essential to its being like this: it is like this: σ .—namely, that it is like this: σ . When one believes that it is like this: σ , that is like this: it is like this: σ ; in which case it is also like this: σ ; so when one believes that it is like this: σ , it is.

But sometimes we make mistakes and overlook things about consciousness! —Under some mode of presentation, yes; but on what basis could that claim be made if it were so under *all* modes of presentation?

4.1.2 Self-knowledge

Concerning (11b): one knows what it is like for oneself *automatically*. More specifically, what it is like for one is essentially revealed to belief: it is a truth of essence that it is like such and such for one just if one believes it is. (Finicky argument, and reply to an objection, relegated to a footnote.²³) Because this truth of essence could only be known if revealed within consciousness, and it is known, it is revealed within consciousness. A belief in a content that is essentially revealed, where this essential revelation is itself revealed within consciousness, would surely count as knowledge if anything did.

4.1.3 Knowledge of other minds

4.1.3.1 Situational knowledge through entrainment Concerning (11c): one knows what it is like for the other by *empathy* or 'simulation'. When I observe Ro and determine that she is happy, the basis for this is my *entrainment* with Ro: a consciously engaged, sometimes consciously initiated, sometimes subtle 'aping' of her outer gestures. Because there is feedback from the doings of the body to the condition of the brain, my brain thereby comes to 'ape' Ro's brain, which I experience as my coming to 'ape'

feeling happy. That aping may sometimes involve actually feeling happy, but can also involve a mere projective-imaginative pretense of feeling happy. Nevertheless, content is entertainable with full authenticity just if entertainable in pretense, so I thereby entertain the content of ‘it is like this: I am happy.’—which is to grasp the content of ‘is happy’. This entrainment with Ro is conscious and established through perception, a *de re* link. As a result, the happiness or pseudo-happiness I experience is in part experienced as ‘radiating’ off Ro, and I predicate ‘is happy’ *of her*, *de re*. This sort of projection onto Ro of a state of consciousness one (at least ostensibly) experiences for oneself is what is, speaking broadly, ‘meant’ by the relativization presented under (Sim-I).

The familiar phenomenon of *joint attention* (Eilan *et al.* 2005) involves two subjects entrained in turning attention on some entity salient in their surroundings. We can think of joint attention as a special case of entrainment: just as we may act either ‘intrinsically’ or in relation to salient entities, we may be entrained either intrinsically or in relation to salient entities. Joint attention is entrainment in relation to a salient entity—entrainment in attention to a salient entity.

4.1.3.2 Knowhow Knowing what it is like to Γ is tightly connected to knowledge how to Γ : . We advance the following principle:

12. One knows what Γ -ing under certain circumstances is like just if one knows how to Γ under those circumstances

Empathy, understood as *explicit consideration of what something or other is like*, does not require a target. On a sunny day in the

park, if one knows what it is (would be) like to turn a cartwheel over there (intentionally), one might explicitly consider what that would be like. That explicit consideration involves projective-imaginative pretense that one is turning a cartwheel over there. Arguably, projective-imaginative pretense that φ is just pretense to oneself to belief that φ ; and therefore, by (Sim-I-a), pretense to oneself to its being like this: φ ; if so, one pretends to oneself that it is like this: I am turning a cartwheel over there.. Then by (Sim-I-c), one pretends to oneself that one turns a cartwheel over there. Arguably, pretending to oneself that one Γ s is just Γ -ing—but for one’s overriding any outward manifestations of Γ -ing. Arguably, one Γ s intentionally only if one knows how to Γ . If so, if one pretends to oneself to Γ , one knows how to Γ . So in our case, one knows how to turn a cartwheel over there. Summarizing: if one knows what it is like to turn a cartwheel over there, one knows how to turn a cartwheel over there. More generally, knowledge of what performing an action is like under certain circumstances requires knowledge how to perform the action under those circumstances. Conversely, that know-how puts one in a position to explicitly consider what it would be like to execute it; being in that position suffices for knowledge of what it is like.

4.1.3.3 Doing without propositions This relativization can be used to unburden false belief of propositions. ‘Fred falsely believes that goats eat cans’ is understood as (13):

13. Relative to Fred, it is like this: goats eat cans, but goats do not eat cans

No proposition there: the false content is nothing beyond what it is like, relative to Fred; the claim of falsity is a claim of a divergence between what it is *relatively* like and what it is like *simpliciter*.

Objection: ‘Relative to ν , it is like this: φ ’ is equivalent to ‘ ν bears R to the proposition that φ ’ (for some R). So the alleged elimination of propositions is merely terminological.

Reply: Claims like (14) are incomprehensible:

14. (a) It is like this: horses eat hay but horses do not eat hay
- (b) It is not like this: goats eat cans but goats eat cans

So if ‘it is like this: φ ’ is equivalent to some claim about propositions, that claim is no weaker than ‘the proposition that φ is true’. But it isn’t, for (15) is comprehensible:²⁴

15. It is not like this: there are viruses on Mars and it is not like this: there are not viruses on Mars

At the conceptually fundamental level, propositions are expunged from the object-language: ‘it is like this: φ ’ is not equivalent to any claim about propositions.²⁵ So then neither is the equivalent claim ‘relative to me, it is like this: φ ’. Merely swapping arguments cannot introduce a proposition—so then neither is ‘relative to ν , it is like this: φ ’.

²⁴After all, uncertainty whether viruses are on Mars is comprehensible.

²⁵Aside from the pleonastic ‘it is like this: the proposition that φ is true.’.

²⁶Lewis himself recognizes a connection between consciousness and rationality (181), but with consciousness limited to ‘conscious reasoning’, a reaction is rational just if it could be overridden by conscious reasoning. The ‘could’ is unclear, and it is phenomenologically implausible that it is only like something for me when I reason to override a brute disposition.

4.1.4 Rationalizing explanation

Concerning (11d): rationalizing explanations also detour through the first-person: rationalizing an action requires knowing what it was like for the subject at the time of onset of the action. In light of what it was like, is commencing the action a fitting next move? If so, the action is explained; otherwise, it remains unintelligible. The same for rationalizing a belief. The notion of ‘fit’ is a phenomenological one: to treat a reaction as fitting a situation is to see a unity of consciousness comprising the situation and the reaction.²⁶

Under (11a), recall, we put off to now the status of attitudes outside consciousness. The connection of these attitudes to rationalization is unclear, for nothing outside of consciousness can rationalize: reactions at a moment in belief and action are fit to what it is like. After all, consider a case of ‘unconscious belief’—a name on the tip of the tongue, say. If prior to completing the search, one blurts out the correct name, one’s behavior would not make sense to one: it would be unintelligible, would seem to be the product of a foreign agency compelling one to blurt. Arguably discourse over ‘standing’ attitudes enables us to narrow down what it is probably like for someone—an important role, to be sure, but one nevertheless derivative on the fundamental case of what it is like.

4.2 Simulationist metasemantics

4.2.1 Theory

Speech acts are actions—highly distinctive actions. For ordinarily there is nothing nontrivial in what it is like common to all cases of the action. What is it like to run around the block? Like this: run around the block!; but there may well be nothing aside from that in common to all such actions.

Not so for speech acts: asserting is putting belief into words; asking is putting wonderment into words; commanding is putting intentions into words. That manifests in what it is like to perform speech acts. For example:

16. (a) If it is like this: assert ‘goats eat cans.’!, it is like this: goats eat cans.
- (b) If it is like this: ask ‘do goats eat cans?’!, it is like this: do goats eat cans?
- (c) If it is like this: command ‘Fred open the door!’!, it is like this: Fred open the door!

I know (16) a praesentibus.

Or, more generally, the contents of the schemata in (Sim-II) are known a praesentibus:

- Sim-II. (a) If it is like this: assert ‘ φ ’!, it is like this: φ
- (b) If it is like this: ask ‘ ω ’!, it is like this: ω
- (c) If it is like this: command ‘ α ’!, it’s like this: α

For the simulationist, this knowledge—neither a posteriori nor social, and linked to knowledge how by (12)—is what is fundamental to knowledge of language.

More precisely: granting the simulationist package presented above, that which each of us additionally knows which constitutes her knowledge of language is the content of the sentences abbreviated by the frame (Sim-II) for her language. For example, Ute’s knowledge of German includes the content of (17a) but not the content of (17b):

17. (a) Wenn es is so: assertieren ‘das ist ja eine Ziege.’!, es ist so: das ist ja eine Ziege.
- (b) Wenn es is so: assertieren ‘that is indeed a goat.’!, es ist so: das ist ja eine Ziege.

The content of (17b) is the same as the content of (16a); accordingly, Fred’s knowledge of English includes the content of (17b) but not the content of (17a).

These contents differ solely in which speech acts they pertain to: that of (17a) pertains to assertion of the sentence ‘das ist ja eine Ziege’, whereas that of (17b) pertains to assertion of the sentence ‘that is indeed a goat’. Fred’s ignorance a praesentibus of the former content (Ute’s of the latter) does not involve any ignorance of what it is to *assert*, and therefore requires his de re ignorance of the sentence ‘das ist ja eine Ziege’ (‘that is indeed a goat’). Conversely, Fred’s knowledge a praesentibus of the content of (17b) (Ute’s knowledge a praesentibus of the content of (17a)) requires his de re knowledge of the sentence ‘that is indeed a goat’ (‘das ist ja eine Ziege’). The limits of my language are the limits of the

sentences I know de re. No sentence of a language I know can be a sentence of a language I do not know. Sentences are *language-bound*.

This runs contrary to an apparently widely presupposed view (one apparently presupposed by Lewis) that sentences of any language are readily known de re by anyone. If so, knowledge and ignorance of language could only consist in knowledge or ignorance of propositional ignorance about how sentences are paired with their meanings; but if that admits of propositional ignorance, a sentence can be paired with any meaning so knowledge and ignorance of language must be knowledge or ignorance of something about how sentence-meaning pairings stand *relative to something else*.

That widely presupposed view is the Saussurean doctrine of the *arbitrariness of the sign*: that sometimes against *c*, sentence tokens *t* and *t'*, both of type *T*, differ in content. Despite its venerable age and wide acceptance, we could not have evidence for it. For if one recognizes that token sentence *t* is of type *T*, one must grasp the nature of *T*; but if one grasps the nature of *T*, it is a sentence of one's own language; and sentence, language, and context together fix content.²⁷ The controversial premiss is the second.

Briefly, we defend it as follows. Sentences are *manifest kinds*: we grasp them only when presented—when involved in speech acts, real or imagined; and grasping which action has been performed requires knowing what the performed action is like. Multiple realizability considerations of the sort leveled against func-

tionalism show this. And there are no meaningless speech acts to perform with sentences. For suppose there were a meaningless act of 'vocalizing'. And consider an initially ambiguous sentence: two readings, one pronunciation. As time passes, the pronunciations of the readings diverge, so there ceases to be any ambiguity: now there are two sentences. If sentences can be vocalized, later vocalizings would be of distinct sentences. What then of an early vocalizing? If it is of a third type, that type is not a sentence, because there are at most two sentences involved. If it is of one or the other types, there is no ambiguity. If it is metaphysically indeterminate which type it belongs to, then vocalizing is not of sentences but of abstractions from sentences. If it is unknown which type it belongs to, then vocalizing is not a kind of action, because one knows what one is doing intentionally.

(That shows also that the conventionalist cannot explain common recognition (2) without simulationist resources. Further, Fred and Sam's common knowledge of context requires joint attention to *g*, which can only be grasped through knowing what it is like; and recognizing that *assertion* has taken place—rather than the mere 'utterance' discussed in (8), insufficient to establish (1) because compatible with make-believe—would seem to require grasp of what it is to assert: and how to explain that grasp without simulationist resources?)

²⁷Saussure's error seems to be type-token conflation. Sure, the same token ink on paper could mean a tree to me and a bird to the alien. But what of it? Languages are made of *types*.

4.2.2 Consequences

Let us show how the simulationist accounts for our cases *Success: English* and *Failure: English* (the *German* cases, of course, in parallel).

If (Sim-I) and (Sim-II) are known a praesentibus, so are the following:

18. (a) If, relative to one, it is like this: assert ‘ φ ’, one believes that $\|\varphi\|$
- (b) If, relative to one, it is like this: ask ‘ ω ’, one wonders $\|\omega\|$
- (c) If, relative to one, it is like this: command ‘ α ’, one intends $\|\alpha\|$

And therefore, by (18) and (Sim-I-c), so are:

19. (a) If one asserts ‘ φ ’, one believes that $\|\varphi\|$
- (b) If one asks ‘ ω ’, one wonders $\|\omega\|$
- (c) If one commands ‘ α ’, one intends $\|\alpha\|$

Recall that in general, if *A* and *B* encounter one another in circumstances of a sort that engendered in each knowledge a praesentibus that φ , it is common knowledge between them that φ . Conversations in one’s home territory are typically what engender knowledge of language. So in general, if *A* and *B* encounter one another in their home territory, an extensive region of common knowledge will largely pervade the intersection of the knowledge of each as encoded in the frame (19).

Suppose that the content of the instance for the declarative sentence ‘that is indeed a goat’ is part of this common knowledge: then it is common knowledge that each has knowledge de re of ‘that is indeed a goat’. If so, one knows what it is like to assert ‘that is indeed a goat’; and one therefore (12) knows how to assert ‘that is indeed a goat’ (under ordinary circumstances).

Recall *entrainment*: in the presence of a human being who is Γ -ing, when one knows how to Γ , one can imitate the other and thereby do something similar to Γ -ing. In particular, when Sam and Fred are entrained and Sam asserts ‘that is indeed a goat’, if Fred knows how to assert ‘that is indeed a goat’, he will do so along with Sam—if only ‘silently’, in his head.

Generalities about about entrainment are central to everyday life and are therefore plausibly common knowledge. If so, the following are common knowledge:

20. When *A* and *B* are entrained with one another and have broadly the same knowledge how to perform speech acts,
 - (a) If *A* asserts ‘ φ ’ out loud, *B* asserts ‘ φ ’ silently
 - (b) If *A* asks ‘ ω ’ out loud, *B* asks ‘ ω ’ silently
 - (c) If *A* commands ‘ α ’ out loud, *B* commands ‘ α ’ silently

These schemata are rough and *ceteris paribus*. Entrainment is not all-or-nothing: with some distance from the speaker, the audience may merely *imagine* silently asserting the sentences, shifting untrusted statements off to the realm of unreality; four-year-olds know what three-year-olds do not, namely that the right way to

react as audience to the first- and second-person pronouns is to reverse them. Accommodating joint attention might require adverbial modification of speech act types: for instance, ‘if A asserts ‘ φ ’ with attention focused on x , B asserts ‘ φ ’ with attention focused on x ’.

Assembling (12), (19), and (20), we conclude that if A and B encounter one another in their home territory and are entrained, then these schemata ranging over typical sentences of their home territory are common knowledge between A and B :

21. (a) If A asserts ‘ φ ’, A and B believe that $\llbracket \varphi \rrbracket$
- (b) If A asks ‘ ω ’, A and B wonder $\llbracket \omega \rrbracket$
- (c) If A commands ‘ α ’, A and B command $\llbracket \alpha \rrbracket$

Now to *Success: English*. When it is common knowledge (thanks in part to joint attention to g) between Fred and Sam that their present context is c^* , their common knowledge of (1) is an instance of the posited common knowledge of (21a). And entrainment explains the common knowledge of (2a) and (2b).

Finally to *Failure: English*. Ute is out of her home territory and therefore reasonably worries that Fred would be de re ignorant of any sentence Ute knew how to assert, so she believes Fred would not recognize any speech act Ute knows how to perform. There is therefore nothing Ute could do to advance the conversation; so she does nothing.

5 Semantics in the context of generative grammar and simulationist metasemantics

5.1 Semantics as phenomenology

The schema (19a) states that if one asserts ‘ φ ’, one believes that $\llbracket \varphi \rrbracket$: with substituends for φ the declarative sentences of L , the content of this schema is part of knowledge of L . With a subtle adjustment, the core apparatus of contemporary semantics can be pressed into service as an instrument for mapping out structure in this content. But because (19a) is a consequence of (Sim-I) and (Sim-II), such structure is inevitably a projection of individual phenomenological structure. And so aggregating across a large number of such mappings holds out the promise of mapping ‘universal structures of consciousness’—of realizing Austin’s (1956) vision of a *linguistic phenomenology*.

The core apparatus is the following interlinked set of postulations and definitions, collectively yielding an analysis of entailment as *truth-preservation across all contexts*:

22. (a) W is modal space, the set of possible worlds
- (b) $\llbracket \varphi \rrbracket^c \subseteq W^{28}$
(the semantic value of a declarative sentence against a context is a proposition)
23. (a) $w_c \in W$: a context determines a ‘world of utterance’

²⁸We drop the relativization to a language from our semantic value brackets to reflect the existence of only one language—yours.

- (b) c ‘affirms’ φ just if $c \vDash \varphi$ just if $w_c \in \llbracket \varphi \rrbracket^c$: affirmation is *verification*, where a context verifies a declarative sentence just if the content of the sentence against the context is true at the world of the context

24. • $\sigma \vdash \tau$ just if whenever c ‘affirms’ σ , c ‘affirms’ τ

The adjustment redefines ‘affirmation’ from the ‘metaphysical’ notion of *verification* to the ‘psychological’ notion of *support*:

- 23’. (a) $i_c \subseteq W$: a context determines an ‘information state’
 (b) c ‘affirms’ φ just if $c \Vdash \varphi$ just if $i_c \subseteq \llbracket \varphi \rrbracket^c$: affirmation is *support*, where a context supports a declarative sentence just if the information state of the context possesses the content of the sentence against the context

The label *mindset semantics* for apparatus enriching (22), (24), and (23’) will be convenient.

Mindset semantics is a relatively conservative departure from the classical approach: patterns of entailment among sentences neither world- nor information-sensitive remain the same; however, entailments relying on world-sensitivity are lost, while entailments relying on information-sensitivity are gained (section 5.3.1). The rejection of (23a) and consequent elimination of w_c and the \vDash -relation blocks the re-emergence of non-deflationary truth: we do not follow Stalnaker’s (1975) proliferation of \Vdash -preservation (mere ‘reasonable inference’) alongside \vDash -preservation (genuine

‘entailment’), but instead eliminate \vDash -preservation, leaving only \Vdash -preservation to count as entailment.

With the following representation constraints, we may press mindset semantics into the service of mapping (19a):

25. (a) If c represents A at t , if $w \in i_c$, w is compatible with A ’s beliefs at t
 (b) If A asserts φ at t , c represents A at t only if $c \Vdash \varphi$

For with a suitable specification of $(\lambda s)(\lambda c)\llbracket s \rrbracket^c$, (22), (23’), and (25) collectively entail (19a), the schema stating that if one asserts ‘ φ ’, one believes that $\llbracket \varphi \rrbracket$.²⁹ But because mindset semantics is, while (19a) is not, ontologically committed to modal space (or propositions), the converse entailment is absent. (Jettisoning w_c is independently motivated, if c represents a state of consciousness: presumably one singles out the actual world *de re* just if one is omniscient.)

We argued in section 4.1.3.3 that propositions are not required for understanding false belief—and if not, the liar should warn us off any use of them other than as instruments. So mindset semantics, interpreted with (25), is an instrument to formally represent one’s knowledge of language. And so the semantic value assignment $(\lambda s)(\lambda c)\llbracket s \rrbracket^c$ embedded in the formal representation is a *part* of that formal representation. Against the conventionalist, the semantic-value assignment is not an object of one’s knowledge of language. Against the cognitivist, no articulate description of the semantic value assignment gives the content (or is the vehicle) of one’s knowledge of language.

²⁹That is roughly so, anyway, in light of the various disparities between one’s *beliefs* and one’s *doxastic possibilities*. Accommodating these disparities within the apparatus is challenging but theoretically fruitful.

5.2 Why propositions?

Lewis (1970, 190) taught us that ‘semantics with no treatment of truth-conditions is not semantics’. No—but if *truth* is expunged from semantics, what instrumental role are propositions even to serve?

Propositions are useful contents for beliefs because (i) they are *subsets* and (ii) their members are *worlds*. Subsets have a Boolean structure of which any product of yes-no questions each admitting reasonable uncertainty is a homomorph and are therefore ideal for representing accretion of information. Worlds are useful because there aren’t any of them, so no two perspectives can differ between them; with the fiction that there is exactly one of them encompassing all perspectives, implemented by rejecting (23a), any ‘merely perspectival’ clash between sentences can be modeled by foliating contexts through parameters located within that one world.

A semantic theory can avail itself of these uses by representing classical connectives as Boolean operators and by representing, say, tense as context-sensitive:

26. (a) $\llbracket \neg\varphi \rrbracket^c = \overline{\llbracket \varphi \rrbracket^c}$
 (b) $\llbracket \varphi \wedge \psi \rrbracket^c = \llbracket \varphi \rrbracket^c \cap \llbracket \psi \rrbracket^c$
 (c) $\llbracket \varphi \vee \psi \rrbracket^c = \llbracket \varphi \rrbracket^c \cup \llbracket \psi \rrbracket^c$
27. (a) T is the set of times
 (b) $t_c \in T$ ³⁰

³⁰This, coupled with the rejection of (23a), is not a respect of ‘analogy between space, time, and modality’ (Lewis 1983, xi); the resulting view of self-location opposes Lewis 1979 and is closer to Stalnaker 2008.

³¹Veltman 1996. See also MacFarlane 2005, Stephenson 2007, Yalcin 2007, Hellie 2011, and by now several others.

- (c) $\llbracket \alpha \rrbracket^c \subseteq W \times T$
 (d) $\llbracket \text{PRES } \alpha \rrbracket^c = \{w : \langle w, t_c \rangle \in \llbracket \alpha \rrbracket^c\}$
 (e) $\llbracket \text{PAST } \alpha \rrbracket^c = \{w : (\exists t^* < t_c)(\langle w, t^* \rangle \in \llbracket \alpha \rrbracket^c)\}$
 (f) If c represents A at t , $t = t_c$

Appended to mindset semantics, the clauses in (26) represent, for instance, that it is never acceptable to answer a question simultaneously in both the affirmative and the negative (on pain of reducing i_c to \emptyset) and that a disjunction is weaker than its disjuncts. The clauses in (27) represent the permissibility of at different times answering a question first in the negative and then in the affirmative when the change is one of temporal perspective. These devices can therefore seem to articulate our experience of ‘objectivity’, a long-standing phenomenological quarry.

5.3 Ways forward

The apparatus of mindset semantics makes available a relatively novel device, the *information-sensitive operator*, with extensive potential for applications in both linguistics and philosophy; the conception of semantics as phenomenology constrains semantic theory in ways that shed new light on the relation of ‘structure’ to semantic theory. I suppress considerable detail, realism, proofs, and the like throughout.

5.3.1 Expressivism

The analogue in mindset semantics of the classical *actuality* operator (28a) is the *Veltman box* (28b):³¹

28. (a) $\llbracket A\varphi \rrbracket^c = \{w : \text{in } w, w_c \in \llbracket \varphi \rrbracket^c\}$
 (b) $\llbracket \Box_v \varphi \rrbracket^c = \{w : \text{in } w, i_c \subseteq \llbracket \varphi \rrbracket^c\}$

Each is in a way ‘transparent’ to its prejacent (complement), and for parallel reasons:

29. (a) $\varphi \dashv\vdash A\varphi$
 (b) $\varphi \dashv\vdash \Box_v \varphi$

But differing behavior embedded marks differences in meaning:

30. (a) $\Box A\varphi \dashv\vdash \Box \varphi$
 (b) $\neg \Box_v \varphi \dashv\vdash \neg \varphi$

Though mindset semantics abandons the capacity to define *A*, the consequent securing of \Box_v and various relatives is well worth whatever costs there may be.³²

One application is in metaphysics. Perhaps metaphysics should worry about the ontology of a theory: perhaps the bare existence of numbers or of moral or mental properties is somehow bad by itself. But perhaps we shouldn’t worry about its ontology if a theory draws no undesirable distinctions in the facts: if math has trivial truth-conditions, or if moral or mental truth supervenes

on physics. Still, we surely *should* worry if moral or mental truth floats free of physics.

The gulf in meaning between physical discourse and discourse about consciousness, in particular, is vast: many have thought this establishes cross-cutting *propositional content* of the former and the latter; (22) then requires that consciousness floats free of physics. But $\Box_v \varphi$ draws no cut through modal space, and therefore has a different *meaning* from any contingent ψ . And yet its meaning differs also from that of absolutely noncontingent claims like ‘ $2 + 2 = 4$ ’ or ‘ $2 + 2 = 5$ ’ in being tied to whether the user believes that φ : its meaning is *expressive* rather than *descriptive*.

It seems quite likely *prima facie* that consciousness discourse is expressive rather than descriptive. Indeed, we observed in (4.1.3.3) that ‘it is like this’ behaves like \Box_v : compare (14) and (28b), (15) and (30b). (In fact, the intended interpretation (25) of mindset semantics together with (Sim-I-a) require \Box_v to receive that reading.) At the end of a long but straight road from simulationism is the dissolution of the hard problem of consciousness.

On the more empirical side, while the promise of information-sensitive operators to resolve a range of long-standing puzzles about modals and conditionals has been tentatively explored elsewhere, foundational unclarity has in certain cases led to errors. Gillies’s (2009) proposal that $\llbracket \text{if } \psi, \varphi \rrbracket^c = \{w : \text{in } w, (i_c \cap \llbracket \psi \rrbracket^c) \subseteq \llbracket \varphi \rrbracket^c\}$ provides distinct *truth-conditions* for the indicative and material conditional; regrettably, Gillies thinks showing non-entailment by the standards of (23) is enough, and so

³²I can perceive no such costs.

Further applications are explored in detail in [Hellie MS](#).

does not notice that anyone who *believes* the material conditional still *believes* the indicative conditional. This same confusion leads [Kolodny and MacFarlane \(2010\)](#) to misdiagnose a puzzle stemming from the wisdom of going for second-best when uncertain as somehow undermining modus ponens.

A more subtle foundational unclarity scotches Kolodny and MacFarlane’s attempted solution to the puzzle: they treat superiority of outcome using the ‘ordering source’ apparatus of [Kratzer \(1981\)](#), a relation between worlds, thereby failing to *aggregate* the potential outcomes, foreseen and not, of acts; this aggregation requires treating ‘ordering source’ as relating not *worlds* but *propositions*. This ‘chunking’ is built into mindset semantics at the ground level, when the world-by-world story in (23) is discarded for the proposition-by-proposition story in (23’). A thoroughly chunky use of modal space would require a re-evaluation of the Stalnaker-Lewis subjunctive conditional (itself both overly ‘descriptivist’ in conception and not well integrated with the provably expressive indicative conditional: [Lewis 1976](#)). Going whole hog would relocate the quantificational force of modals from worlds to contexts: apparently necessary for a unified theory of modals, inasmuch as the ‘epistemic’ modals appear to behave like \Box_v ([Yalcin 2007](#)).

5.3.2 Discourse, structure, compositionality

Apparently, the semantic value of a sentence against a context is typically a *relation* rather than a *proposition*. For consider (31):

31. (a) Caesar awoke before dawn
- (b) Caesar seldom awoke before dawn
- (c) Caesar awoke before dawn. It was his least favorite day.
- (d) Caesar seldom awoke before dawn. It was his least favorite time to wake up. It was his least favorite thing to do before dawn.
- (e) Caesar seldom awoke before dawn. # It was his least favorite day.

According to [Lewis \(1975a\)](#), ‘seldom’ in (31b) binds all free argument places in (31a): there obviously is at least one, because (31c) uses that argument as the antecedent of the anaphor. But Lewis is mistaken: argument places remain in (31b) to serve as antecedents in (31d). But (31b) does bind at least the *day* argument place targeted in (31c), because that place is no longer available as antecedent in (31e).

This data cannot be explained semantically³³ without reconceiving context as involving a relation of indefinite arity (a member of $J^\omega \mapsto 2^W$), and semantic values of sentences as n -ary relations (members of $J^n \mapsto 2^W$). For example, the semantic value of (31a) would map at least a day-event-moment triple into the worlds at which the moment is dawn of the day, the event occurs before the moment, and is an awakening by Caesar. Processing an assertion of (31a) would then involve making certain structural judgements about how to link the argument-places in that semantic value with the argument places in the context. The contrast be-

³³A non-semantic explanation is ‘discourse representation theory’ ([Kamp 1981](#), [Heim 1982](#)); the present approach is an attempt to semanticize DRT.

tween (31d) and (31e) gives a flavor of what is involved in this: the latter continuation requires linking the pronoun with some initialized contextual argument place for a day; but the adverb of quantification forestalls the initialization of such an argument place by the semantic value of the prior assertion. By contrast, the former continuations face no such difficulties.

Accommodating this within our metasemantics requires ‘belief that $\llbracket(31a)\rrbracket$ ’ to involve considerable subtlety. For one’s own present context, homophony is always available; beyond that, interpretation requires a substitution like ‘on the day they were thinking of, in the event they were thinking of, at the moment they were thinking of, the moment of that day was it’s dawn and the event was an awakening prior to the moment by Caesar’. That would be a problem only if this sort of ‘file-card tracking’ were alien to phenomenological life; and it certainly seems not to be.

My conclusion should be distinguished from that of the central argument in Yalcin (MS). He concludes from reflection on (32) that to secure ‘compositionality’, the semantic value of a sentence containing a free variable, like (32b), must be a function from variable assignments to propositions:

32. (a) Every boy loves some girl $\Rightarrow [\forall x : Bx][\exists y : Gy](Lxy)$
 (b) He loves some girl $\Rightarrow [\exists y : Gy](Lxy)$

Incredulous that psychological content could care about structural linguistic bookkeeping, Yalcin concludes that semantic values are distinct from contents, and philosophy of language therefore autonomous from philosophy of mind.

Yalcin assumes—with the orthodoxy, I acknowledge—that the ‘logical forms’ in (32) are correct and that ‘variable assignments’ are components of context which provide context-relative semantic values to unbound variables. I too am incredulous, but take the modus tollens: the orthodoxy is mistaken. It is independently implausible: natural language surely does not involve variable expressions; the orthodoxy is too weak to accommodate anaphora with antecedent within the scope of a quantifier, as in (31d); the associated semantic/pragmatic theory conflates matters of structural bookkeeping with matters of interpretation.

It remains to account both for the multiple readings of (32a) and for the clarity of its argument structure without variables. The resolution is straightforward: interpreting the sentence requires recognizing both a *compositional* and an *argument-structural* characterization. A semantic theory for natural language quantification therefore cannot operate on a single level of ‘logical form’ but must accommodate two interacting forms.

Standard characterizations of ‘compositionality’ presuppose that a sentence has only a single structural characterization relevant to interpretation. That presupposition may be false. If this long-standing constraint is lifted, we should not despair. Its rigidly local and algorithmic picture of interpretation is out of tune with what it is like to alternate between readings of a scopally ambiguous sentence. It is not unlike flipping the Necker cube: both involve my intentional manipulation of a gestalt ‘read’ on the given.

References

- Austin, John Langshaw, 1956. 'A Plea for Excuses'. *Proceedings of the Aristotelian Society*, 57:1–30.
- Cann, Ronnie, Ruth Kempson, and Eleni Gregoromichaelaki, 2009. *Semantics*. Cambridge University Press.
- Chomsky, Noam, 1959. 'A Review of BF Skinner's Verbal Behavior'. *Language*, 35:26–58.
- Chomsky, Noam, 1965. *Aspects of the Theory of Syntax*. Cambridge, MA: The MIT Press.
- Chomsky, Noam, 1975. *Reflections on Language*. New York: Pantheon.
- Chomsky, Noam, 1986. *Knowledge of Language: Its Nature, Origin, and Use*. New York: Praeger.
- Chomsky, Noam, 2000. *New Horizons in the Study of Language and Mind*. Cambridge, MA: The MIT Press.
- Devitt, Michael, 2006. *Ignorance of Language*. Oxford: Clarendon Press.
- Dilthey, Wilhelm, 1988. *Introduction to the Human Sciences: An Attempt to Lay a Foundation for the Study of Society and History*. Wayne State University Press.
- Eilan, Naomi, Christoph Hoerl, Teresa McCormack, and Johannes Roessler, 2005. *Joint Attention: Communication and Other Minds: Issues in Philosophy and Psychology*. Oxford: Clarendon Press.
- Everaert, Martin, Tom Lenz, Hanna De Mulder, Øystein Nilsen, and Arjen Zondervan, editors, 2010. *The Linguistics Enterprise: From Knowledge of Language to Knowledge in Linguistics*. Amsterdam/Philadelphia: John Benjamins.
- Field, Hartry, 1994. 'Deflationist Views of Meaning and Content'. *Mind*, 103:249–85.
- Gillies, Anthony S., 2009. 'On Truth-Conditions for If (but Not Quite Only If)'. *Philosophical Review*, 118:325–349.
- Glanzberg, Michael, 2003. 'Minimalism and Paradoxes'. *Synthese*, 135:13–36.
- Glanzberg, Michael, 2004. 'A Contextual-Hierarchical Approach to Truth and the Liar Paradox'. *Journal of Philosophical Logic*, 33:27–88.
- Harman, Gilbert, 1975. 'Language, Thought, and Communication'. *Minnesota Studies in the Philosophy of Science*, 7:270–298.
- Harman, Gilbert, 1990. 'Immanent and Transcendent Approaches to the Theory of Meaning'. In Roger Gibson and Robert B. Barrett, editors, *Perspectives on Quine*. Oxford: Blackwell. Reprinted as 'Immanent and Transcendent Approaches to Meaning and Mind' in [Harman 1999](#).
- Harman, Gilbert, 1999. *Reasoning, Meaning, and Mind*. Oxford: Oxford University Press.

- Heal, Jane, 2003. *Mind, Reason, and Imagination*. Cambridge: Cambridge University Press.
- Heim, Irene, 1982. *The Semantics of Definite and Indefinite Noun Phrases*. Ph.D. thesis, University of Massachusetts, Amherst, MA. 2011 edition.
- Heim, Irene and Angelika Kratzer, 1998. *Semantics in Generative Grammar*. Oxford: Blackwell.
- Hellie, Benj, 2011. 'There It Is'. *Philosophical Issues*, 21:110–164.
- Hellie, Benj, MS. *Out Of This World: Expressivism, the Self, Context, and Content*.
- Hornsby, Jennifer, 2005. 'Semantic Knowledge and Practical Knowledge'. *Aristotelian Society Supplementary Volume*, 79:107–130.
- Kamp, Hans, 1981. 'A Theory of Truth and Semantic Representation'. In *Formal Semantics—the Essential Readings*, 189–222. Blackwell.
- Kaplan, David, 1977/1989. 'Demonstratives'. In Joseph Almog, John Perry, and Howard Wettstein, editors, *Themes From Kaplan*. Oxford: Oxford University Press.
- Katz, Jerrold J. and Paul Postal, 1964. *An Integrated Theory of Linguistic Descriptions*. Cambridge, MA: The MIT Press.
- Kolodny, Niko and John MacFarlane, 2010. 'Ifs and Oughts'. *Journal of Philosophy*, 107:115–143.
- Kratzer, Angelika, 1981. 'The Notional Category of Modality'. In H. J. Eikmeyer and H. Reiser, editors, *Words, Worlds, and Contexts*, 38–74. Berlin and New York: de Gruyter.
- Kripke, Saul Aron, 1982. *Wittgenstein on Rules and Private Language*. Cambridge, MA: Harvard University Press.
- Larson, Richard and Gabriel Segal, 1995. *Knowledge of Meaning*. Cambridge, MA: The MIT Press.
- Laurence, Stephen, 2003. 'Is Linguistics a Branch of Psychology?' In Alex Barber, editor, *Epistemology of Language*. Oxford: Oxford University Press.
- Lewis, David, 1966. 'An Argument for the Identity Theory'. *Journal of Philosophy*, 63:17–25.
- Lewis, David, 1970. 'General Semantics'. *Synthese*, 22:18–67.
- Lewis, David, 1975a. 'Adverbs of Quantification'. In Edward L. Keenan, editor, *Formal Semantics of Natural Language*. Cambridge: Cambridge University Press. Reprinted in [Lewis 1998](#).
- Lewis, David, 1975b. 'Languages and Language'. In Keith Gunderson, editor, *Minnesota Studies in the Philosophy of Science*, volume VII. Minneapolis: University of Minnesota Press. Reprinted in [Lewis 1983](#).
- Lewis, David, 1976. 'Probabilities of Conditionals and Conditional Probabilities'. *Philosophical Review*, 85:297–315.
- Lewis, David, 1979. 'Attitudes De Dicto and De Se'. *The Philosophical Review*, 88:513–43. Reprinted in [Lewis 1983](#).

- Lewis, David, 1980. 'Index, Context, and Content'. In Stig Kanger and Sven Öhman, editors, *Philosophy and Grammar*. Dordrecht: Reidel. Reprinted in [Lewis 1998](#).
- Lewis, David, 1983. *Philosophical Papers*, volume I. Oxford: Oxford University Press.
- Lewis, David, 1988. 'What Experience Teaches'. *Proceedings of the Russellian Society*, 29–57. Reprinted in [Lewis 1999](#).
- Lewis, David, 1994. 'Reduction of Mind'. In Samuel Guttenplan, editor, *Companion to the Philosophy of Mind*. Oxford: Blackwell. Reprinted in [Lewis 1999](#).
- Lewis, David, 1998. *Papers in Philosophical Logic*. Cambridge: Cambridge University Press.
- Lewis, David, 1999. *Papers in Metaphysics and Epistemology*. Cambridge: Cambridge University Press.
- Longworth, Guy, 2008. 'Linguistic Understanding and Knowledge'. *Noûs*, 42:50–79.
- Ludlow, Peter, 1999. *Semantics, Tense, and Time: An Essay in the Metaphysics of Natural Language*. Cambridge, MA: The MIT Press.
- MacFarlane, John, 2005. 'The Assessment Sensitivity of Knowledge Attributions'. In *Oxford Studies in Epistemology*, volume 1, 197–234.
- Matthews, Robert J., 2006. 'Knowledge of Language and Linguistic Competence'. In Enrique Villanueva, editor, *Philosophy of Language*, volume 16 of *Philosophical Issues*, 200–20. New York: Blackwell.
- Pettit, Dean, 2002. 'Why Knowledge is Unnecessary for Understanding Language'. *Mind*, 111:519–550.
- Rey, Georges, 2003. 'Intentional Content and a Chomskian Linguistics'. In *Epistemology of Language*. Oxford University Press.
- Stalnaker, Robert, 1975. 'Indicative Conditionals'. *Philosophia*, 5:269–286.
- Stalnaker, Robert C., 1999. *Context and Content*. Oxford: Oxford University Press.
- Stalnaker, Robert C., 2008. *Our Knowledge of the Internal World*. Oxford: Oxford University Press.
- Stephenson, Tamina, 2007. 'Judgement Dependence, Epistemic Modals, and Predicates of Personal Taste'. *Linguistics and Philosophy*, 30:487–525.
- Tsai, Cheng-Hung, 2010. 'Practical Knowledge of Language'. *Philosophia*, 38:331–341.
- Tsai, Cheng-Hung, 2011. 'Linguistic Know-How: The Limits of Intellectualism'. *Theoria*, 77:71–86.
- Veltman, Frank, 1996. 'Defaults in Update Semantics'. *Journal of Philosophical Logic*, 25:221–61.
- Yalcin, Seth, 2007. 'Epistemic Modals'. *Mind*, 116:983–1026.
- Yalcin, Seth, MS. 'Semantics and Metasemantics in the Context of Generative Grammar'.