Chalmers' Two Dimensionalism. AG Clark, 2012-01-26


Intensions are functions that map possible worlds to extensions. Frege showed how one can think of the "extension" of a true sentence as being its truth value, i.e. the truth value "true" (aka "the True"). When Chalmers says "the intension of S is true in world w" he means "the intension of S evaluated at world w is the True". The value of that function evaluated at that world is the truth value True.

Secondary intensions of expressions are the standard Kripkean functions that map possible worlds to extensions of those expressions. On Kripke's line, identities between rigid designators are metaphysically necessary (evaluate to the True in every possible world in which those designators have a reference) even though they are a posteriori.

Primary intensions are meant to ground epistemic necessities: things knowable a priori. One wrinkle is that Chalmers thinks that the bearers of primary intension are not sentences (not the "linguistic content" of expression types) but rather utterance tokens. [So when he says "the sentence S" he often means "the utterance token of sentence S"]. A somewhat reworked definition hence gives:

the primary intension of a sentence token S at scenario w evaluates to the True iff a complete and semantically neutral specification of w epistemically necessitates S  (p 551)

a description D epistemically necessitates S iff accepting D should lead one to rationally endorse S (given idealized reflection, but requiring no further empirical information)  (p 551)

so

the primary intension of a sentence token S at scenario w evaluates to the True iff accepting a complete and semantically neutral specification of w should lead one to rationally endorse S (given idealized reflection, but requiring no further empirical information)

The idea is that if one knows how to use the expressions in S, and is given a complete and semantically neutral specification of an epistemic possibility w, then one can evaluate whether S is true or false in w. The specification of w needn't use the vocabulary of S:

there is some reasonably restricted vocabulary V, such that for arbitrary sentences T, then once we know enough V truths, we will be in a position to know (without needing further empirical information) the truth value of T. (p 554).

For example, once we are given enough information about the appearance, behavior, composition, and distribution of various substances in our environment, as well as about their relations to us, then we are in a position to conclude (without needing further empirical information) that water is H2O. (p 553)

a "semantically neutral" specification is one that is "free of terms that give rise to Kripkean a posteriori necessities  [e.g. free of rigid designators, or more generally of "direct reference"] and a priori contingencies" [which could be any terms at all, so must be a mistake]

it is a complete specification of world w iff it epistemically necessitates any semantically neutral sentence that is true of w
Another handy formulation is T9 (p 549) which can be written

tokens of A and B have the same primary intension iff the sentence "A iff B" is epistemically necessary, ie true a priori, ie true in every scenario, ie true in every maximally specific epistemic possibility

which is to say

tokens of A and B have the same primary intension iff in every scenario, a complete and semantically neutral specification of that scenario would lead one to rationally endorse A if and only if it would lead one to rationally endorse B.

A "scenario" is more than just a context of utterance: it is a "centered" possible world. The latter is an ordered triple of a possible world, an individual, and a time. The individual and the time provide the "center" of that centered world; a "you are here" marker (p 551)

The epistemic construal of a "scenario" is a "maximally specific epistemic possibility. They can be constructed as maximal a priori consistent sets of sentences in an ideal language" (p 552). This version has different implications than the centered-world version (see below).

Some formulations that are confusing:

(1) that a primary intension is a function from possible worlds to a [secondary] intension (p. 543). This would yield the matrix on p. 543, but (a) it makes the two kinds of intension different kinds of function, and (b) it suggests that when we think about primary intensions, we are thinking about the intensions an expression would have in some counterfactual world. Chalmers rejects that in his reply to criticisms, insisting that the expressions are the ones in this world, and they have their intensions in this world. (So the array itself is confusing.)

(2) that a primary intension is the function described by the diagonal of the matrix on p. 543 (suggested on p 544, 547). The diagonal is defined by the ordered pairs <w, w>, treating the same world both as actual (fixing the secondary intension to that row) and as counterfactual (assessing its extension in that world).

It seems simpler to think of the domain of primary intensions as simply: scenarios, which are centered possible worlds. These are finer grained than possible worlds (because they include a "you are here" marker), and they are not the same as ordered pairs of possible worlds (which wouldn't give them a center). But note that this again primary intensions a different kind of function than secondary intensions: it maps a possible world, individual, and location to an extension, as opposed to mapping (merely) a possible world to an extension.

Some old ideas in new bottles:

T4: a sentence token S is metaphysically necessary iff in all possible worlds the value of the secondary intension of S is the True. (p. 546)

T5: a sentence token S is a priori (epistemically necessary) iff in all scenarios the value of the primary intension of S is the True. (p. 546)

T6: a sentence token S is necessary a posteriori iff in all possible worlds the value of the secondary intension of S is the True, but in some scenarios the value of the primary intension of S is the False. (p. 548)
T7: a sentence token $S$ is contingent a priori iff in all scenarios the value of the primary intension of $S$ is the True but in some possible worlds the value of the secondary intension of $S$ is the False. (p. 548)

The key claims about primary intensions:

He notes on 548 that T5 is the distinctive claim of two-dimensionalism, asserting "a very strong and general connection between primary intensions and a priority". He says it is an analogy for T4, but in the epistemic domain.

Even Kripke allows that ‘water is not H2O’ is epistemically possible. ... We simply have to strongly distinguish between this sort of epistemic evaluation of sentences in worlds (in which turns on epistemic necessity) from the usual sort of counterfactual evaluation (which turns on metaphysical necessity). Primary intensions are grounded in the former, secondary intensions are grounded in the latter. (p 550)

He notes that the centered-world conception of scenarios yields a non-trivial version of T5, for which further argument is given in Ch. 6, secs 6-8 (p 552). Some argue that there are conceivable scenarios which are not found in any possible world, for example (Yablo 1999, 2000). Type B materialists think zombies are conceivable, but not metaphysically possible. In ch. 6 Chalmers will argue there are no such counter-examples to what he calls the "conceivability-possibility" thesis (p 552).

Chalmers reiterates that T5 provides a key premise linking conceivability and metaphysical possibility on p. 560, iii.

On 566 he suggests that metaphysical modality itself "has roots in the epistemic domain". If we understand scenarios as maximal sets of sentences describing epistemic possibilities, then two dimensionalism will not license inferences from conceivability to possibility, and the arguments of ch. 6 won't work (see 566-567).