

Kripke on Frege on Sense and Reference

David Chalmers

Kripke's Frege

- Kripke's "Frege Theory of Sense and Reference: Some Exegetical Notes"
- Focuses on Frege on the hierarchy of senses and on the senses of 'I' and 'now'.
- Argues that Frege is committed to a doctrine of acquaintance and "revelatory senses".

Plan

1. Kripke's Frege on acquaintance and hierarchy.
2. Kripke's Frege on 'I' and 'now'.
3. In both cases: argue that 2D Fregeanism captures key aspects of Kripke's Frege.
4. If time: Argue that 2D Fregeanism can resist Kripke's anti-Fregean arguments.

Frege on Sense and Reference

- 'Hesperus is Phosphorus' is true
 - So 'Hesperus' and 'Phosphorus' have the same referent: Venus
- 'Hesperus is Phosphorus' is cognitively significant
 - So 'Hesperus' and 'Phosphorus' have distinct senses.

Frege on Indirect Speech

- In direct speech, e.g. ‘Hesperus is Phosphorus’
 - ‘Hesperus’ refers to Venus
- In indirect speech, e.g. ‘John believes that Hesperus is Phosphorus’
 - ‘Hesperus’ refers to its customary sense

Frege on the Hierarchy

- This requires an indirect sense via which 'Hesperus' (in indirect speech) can refer to its ordinary sense.
- And a doubly indirect sense via which 'Hesperus' (in doubly indirect speech) refers to its indirect sense
 - 'Mary believes that John believes that Hesperus is a planet'
- And so on

The Backward Road Objection

- Russell: “There is no backward road from reference to sense”.
- Dummett: Since there is no backward road from sense to indirect sense, indirect senses are underdetermined.
- Davidson: Learning a language requires learning the infinite hierarchy. This makes language unlearnable.

Kripke on Revelatory Senses

- Kripke: Some senses are *revelatory senses*:
 - “if one can figure out from the sense alone what the referent is”
 - E.g. the sense of ‘the square of 3’
- Some senses are *immediately revelatory*:
 - “anyone who understands the sense knows the referent” (with no calculation)
 - e.g. the sense of ‘9’

Kripke on Acquaintance

- Immediately revelatory senses are acquaintance senses, turning on acquaintance with the referent:
- Russell's objects of acquaintance: sense-data, universals, the self.
- Kripke's Frege: roughly the same objects
- No Frege puzzles for acquaintance senses?

Kripke on the Backward Road

- When we use an expression, we're acquainted with its sense
- So we [can] grasp a higher-order sense that refers to that sense
- Where acquaintance senses are concerned, there is a backward road from reference to sense!

Revelatory Senses and Epistemic Rigidity

- Kripke's notion of a revelatory sense is closely connected to a central 2D notion: epistemic rigidity.

Metaphysical Rigidity

- Kripke 1972: A (metaphysically) rigid designator picks out the same referent in all metaphysically possible worlds.
- 'Hesperus', 'Phosphorus' are both metaphysically rigid designators for Venus
- 'Hesperus is Phosphorus' is metaphysically necessary.

Epistemic Rigidity

- An epistemically rigid designator is one that picks out the same entity in all epistemically possible scenarios.
- ‘Hesperus is Phosphorus’ is not epistemically necessary (a priori)
- So ‘Hesperus’, ‘Phosphorus’ are not epistemically rigid.

Epistemically Possible Scenarios

- Metaphysically possible worlds are ways the world could have been.
- Epistemically possible scenarios are ways the world could be
 - epistemically could be
 - could turn out (a priori) to be

More on Scenarios

- If S is epistemically possible (not ruled out a priori), there's an epistemically possible scenario verifying S.
- 'Hesperus is not Phosphorus' is epistemically possible, so there's a scenario verifying 'Hesperus is not Phosphorus'
- Intuitively, a scenario in which the morning and evening stars are distinct.

Verification

- An epistemically possible scenario w verifies a sentence S (in a context) when, roughly, if one accepts (in that context) that w is actual, one should accept S .
- N.B. epistemic dependence, not context-dependence.
- If one accepts that in the actual scenario the morning star is not the evening star, one should reject 'Hesperus = Phosphorus'.

Primary Intensions

- The primary intension of a sentence S is the corresponding function from scenarios to truth-values.
- The primary intension of an expression S is an associated function from scenarios to extensions
- E.g. Primary intension of 'Hesperus' picks out (roughly) the evening star in a scenario.

Epistemic Rigidity

- An epistemically rigid designator is one that picks out the same extension in all epistemically possible scenarios
 - I.e. has a constant primary intension
- Alternatively: an expression whose referent one can know a priori.
 - Its referent does not depend on which scenario is actual.

Which Expressions are Epistemically Rigid?

- Not epistemically rigid: descriptions, ordinary proper names, natural kind terms, any term for a concrete entity?
- Epistemically rigid: mathematical expressions ('9', '56+73'), some expressions for properties and relations ('consciousness', 'friendly', 'cause').

2D Fregeanism (First Pass)

- The sense of an expression (in a context) is its primary intension (in that context)
- The thought expressed by a sentence (...) is its structured primary intension (...).

2D Revelatory Senses

- A (structured or unstructured) primary intension is revelatory iff it is constant (same value at all scenarios).
- I.e. a (complex or simple) expression has a revelatory sense iff it is epistemically rigid.

2D Immediately Revelatory Senses?

- 2D framework is cast in terms of apriority so may not distinguish revelatory and immediately revelatory senses.
- But one hypothesis: non-immediately revelatory senses always involve structure (at some level of analysis).
- If so: an immediate revelatory sense is an unstructured constant primary intension.
- If not: fine-grain primary intensions.

2D Higher-Order Senses

- Take a primary intension f , mapping scenarios w to extensions $f(w)$.
- The higher-order primary intension $A(f)$ is a constant intension mapping every scenario w to f .
- A is an ascension function, stepping up the Fregean hierarchy.

2D Attitude Ascriptions (First Pass)

- In 'S believes that p', if S has primary intension s and p has primary intension f, 'that p' is a singular term referring to f with sense A(f).
- Structured primary intension i of this sentence: $w \rightarrow \text{believes}(s(w), f)$

2D Embedded Attitude Ascriptions

- In 'T believes that S believes that p',
- 'that S believes that p' refers to i under sense $A(i)$.
- Primary intension: $w \rightarrow \text{believes}(t(w), A(w \rightarrow \text{believes}(s(w), f)))$

Complications

- (i) Need referential information too (enriched intensions)
- (ii) Need co-ordination of primary intensions
- (iii) Can preserve semantic innocence by denying extensional compositionality ('that' is an ascension operator)
- See 'Propositions and Attitude Ascriptions' (*Nous*, 2011)

Frege on 'Now'

- What is the thought expressed by 'It is raining now'?
- Frege: Different thoughts on different occasions.
- 'The time of utterance is part of the expression of the thought'.

Kripke's Frege on 'Now'

- Kripke's Frege: The full "sentence" uttered is an ordered pair (L, t) , where L is a piece of language ('It is raining now') and t is the time.
- The time t autonymously designates itself, via an acquaintance sense. The speaker is always acquainted with the current time.
- 'It is raining now' expresses an incomplete (predicative) sense, completed by adding t .

Kripke's Frege on 'Yesterday'

- 'It is raining today' (on Monday) vs. 'It rained yesterday' (on Tuesday).
- Kripke's Frege: the underlying sentences are $\langle S_0, t_0 \rangle$ and $\langle S_1, t_1 \rangle$, expressing *different* thoughts.
- A present-tense thought at a time cannot be recaptured at any later time.
- Both time and mode of presentation matter.

Frege on 'I'

- “Everyone is presented to himself in a special and primitive way to which he is presented to no-one else.”

Frege on 'I' (Continued)

- “The same utterance containing the word ‘I’ in the mouths of different men will express different thoughts of which some may be true, others false.”
- “In all such cases the mere wording, as it can be preserved in writing, is not the complete expression of the thought; the knowledge of certain conditions accompanying the utterance, which are used as means of expressing the thought, is needed for us to grasp the thought correctly. Pointing the finger, hand gestures, glances may belong here too.”

Kripke's Frege on 'I'

- The full sentence uttered is an ordered pair (L, s), where L is a piece of language ('I am hungry') and s is the speaker.
- Here s autonymously designates itself, via an acquaintance sense. The speaker is always acquainted with herself.
- 'I am hungry' expresses an incomplete (predicative) sense, completed by adding s.

Worries about Kripke's Frege

- The model of 'I' and 'now'-thoughts as involving acquaintance senses is powerful.
- But the model with subjects and times as quasi-linguistic items is at least odd.
- The model renders 'I' and 'now' strangely redundant: not basic devices of self/time-reference, just trivial identity functions.

Alternative Model

- Alternative model:
 - ‘I’, ‘now’ (in a context) express acquaintance senses
 - the subject and the time are contextual (not quasi-linguistic) features determining which acquaintance sense is expressed.

2D Analysis: Scenarios as Centered Worlds

- Epistemically possible scenarios are often understood as centered worlds: triples of $\langle w, s, t \rangle$ (world, subject, time).
- The primary intension of 'I' is a centered intension mapping $\langle w, s, t \rangle$ to s .
- The primary intension of 'now' is a centered intension mapping $\langle w, s, t \rangle$ to t .

Senses as Centered Intensions

- Earlier 2D model: Senses of 'I' and of 'now' are their centered primary intensions.
- The thought expressed by 'I am hungry' is true at all scenarios where the subject at the center is hungry.
- Cf. Lewis on the content of *de se* thoughts.

Trouble with Earlier Model

- But: Every utterance of 'I am hungry' has the same primary intension. Same for 'It is raining'.
- Violates Frege's claim that different utterances express different thoughts.
- Sense doesn't determine reference (only determines it in a context).

Kripke's Frege in 2D

- Kripke's Frege: akin to a model where the sense of 'I am hungry now' uttered by S at t is an ordered triple $\langle p, S, t \rangle$ where p is the structured primary intension of the sentence.
- In effect: evaluating the primary intension at the speaker and the time (cf. Lewis).

Alternative: Enriched Intensions

- The enriched intension of a simple expression is an ordered pair of its primary intension and its referent.
- The enriched intension of a complex expression is a structure consisting of the enriched intensions of its parts.

Senses as Enriched Intensions

- Suggestion: The sense of an expression (in a context) is its enriched intension (in that context).
- E.g. enriched intension of 'I' (this context): ordered pair <centered s-intension, DJC>
- Enriched intension of 'now': ordered pair <centered t-intension, 12:30 9/15/11>

'I' and 'Now' Thoughts

- 'I'-thoughts involve first-person-directed senses tied to a specific speaker.
 - Different 'I'-thoughts for different speakers, no-one else can entertain mine.
- 'Now'-thoughts involve present-directed senses tied to a specific time.
 - Different 'now'-thoughts for different times, can't entertain this one elsewhen.

Comparison to Frege's Kripke

- 'I' and 'now' thoughts behave much like those of Kripke's Frege
- But 'I' and 'now' express the relevant senses.
- Speaker functions as context (or perhaps metasemantics), not as language, determining sense expressed by 'I'.

Acquaintance Senses

- The centered enriched intensions of 'I' and 'now' can be seen as acquaintance senses:
 - Picking out the speaker and current time by direct ostension.
 - The items at the center of a centered world are there because they are available for especially direct ostension.

Epistemic Rigidity?

- Still: 'I' and 'now' (even in a context) are not epistemically rigid
- They pick out different individuals in different scenarios
- I can't know the referent of 'I' or 'now' a priori.

Two Sorts of Acquaintance

- Moral: There are two fundamentally different sorts of Russellian acquaintance
- Acquaintance with abstracta (numbers, properties), which involves epistemic rigidity.
- Acquaintance with concreta (self, time, experiences), which involves direct ostension.

Enriched Intension Model

- Enriched intension model of senses can be developed quite generally.
 - Also for proper names, natural kind terms, etc.
 - Can still have a hierarchy of enriched intensions.
 - Certainly not Frege, but a plausible Fregean view that may help to understand Frege?

Enriched Propositions

- Sentences are associated with enriched propositions: in effect involving structured primary intensions and Russellian propositions.
- Yields a better semantics of attitude ascriptions.
- Co-ordination of enriched propositions helps with communication and attitude ascriptions.

On Kripke's Anti-Fregean Arguments

- Finally: The 2D enriched intension model has the resources to deal with Kripke's important anti-Fregean arguments from *Naming and Necessity*.

Kripke's Modal Argument

- 'It is necessary that Hesperus is visible in the evening'.
- Venus is part of the enriched intension of 'Hesperus'.
- Modal operators operate on the referential aspect of enriched intensions, not the primary-intension aspect.

Kripke's Epistemic Argument

- For any nontrivial description 'the D', it could turn out that Godel was not the D.
- Kripke: If stealer/prover scenario w is actual, we deny 'Godel is the D'. 'Godel' picks out the stealer, 'the D' picks out the prover.
- 2D model captures this by saying that at w , the primary intension of 'Godel' picks out the prover, not the stealer.
- Intensions (not descriptions) automatically fit the Kripkean data.

Conclusion

- Kripke's Fregeanism is a beautiful view.
- So beautiful that it may even be true.