Meaning, Reference and Modality 9

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The Propositional Attitudes

- The term 'propositional attitude'
- *know*, *hope*, *fear*, *regret*, *desire*, ...
- Focus on *believe*, a relation expression:
  - characterize an agent (explain or describe her behaviour) or
  - characterize a proposition (which may increase its likelihood).
- Are the objects truth values?
  - Obviously not.
- Disposition to assent to a sentence? (Rudolf Carnap, W.V.O. Quine)
- Relations with structured meanings? (Max Cresswell)

≫ Holding true propositions. (Sets of possible worlds).

Stalnaker in Inquiry (1987)

- "To desire that P is to be disposed to act in ways that would tend to bring it about that P in a world in which one's beliefs, whatever they are, were true. To believe that P is to be disposed to act in ways that would tend to satisfy one's desires, whatever they are, in a world in which P (together with one's other beliefs) were true." (p. 15)
- "A possible world is what truth is relative to, what people distinguish between in their rational activities. To believe in possible worlds is to believe only that those activities have a certain structure, the structure which possible worlds theory helps to bring about." (p. 57)
- "When we ascribe attitudes to the animal, what we presuppose is simply that it has *some* mechanism for representing and distinguishing between alternative situations. (...) the conceptual space necessary to account for its capacities and dispositions might consist of just a few relevantly different "ways things might be." " (p. 63)

Omniscience and Deduction

- The omniscience problem:
  - If $\models \phi$ then $\models B_x\phi$.
- Closure under entailment:
  - If $B_x\phi$ and $\phi \models \psi$, then $B_x\psi$
- Not dealt with today.

Some Appetizers

- Bertand Russell:
  - I thought your yaught was larger than it is.
  - $B_{BR}(y > y)$, versus, $\exists y B_{BR} \exists z(z > y)$
- W.V.O. Quine:
  - Ralph believes someone is a spy.
  - There is someone whom Ralph believes to be a spy. $(\exists x B_r(Sx))$
  - Ralph believes there are spies. $(B_r(\exists x Sx))$
  - The difference is vast; indeed, if Ralph is like most of us, [the second] is true and [the first] is false.
  - [The first, like others] involve quantifying into a propositional-attitude idiom from the outside. This is dubious business. (p. 178–9)

Peter Geach

"But if we say of a number of people that each of them believes that he himself is clever, what belief exactly are we attributing to all of them? Certainly they do not all believe the same proposition, as "proposition" is commonly understood."

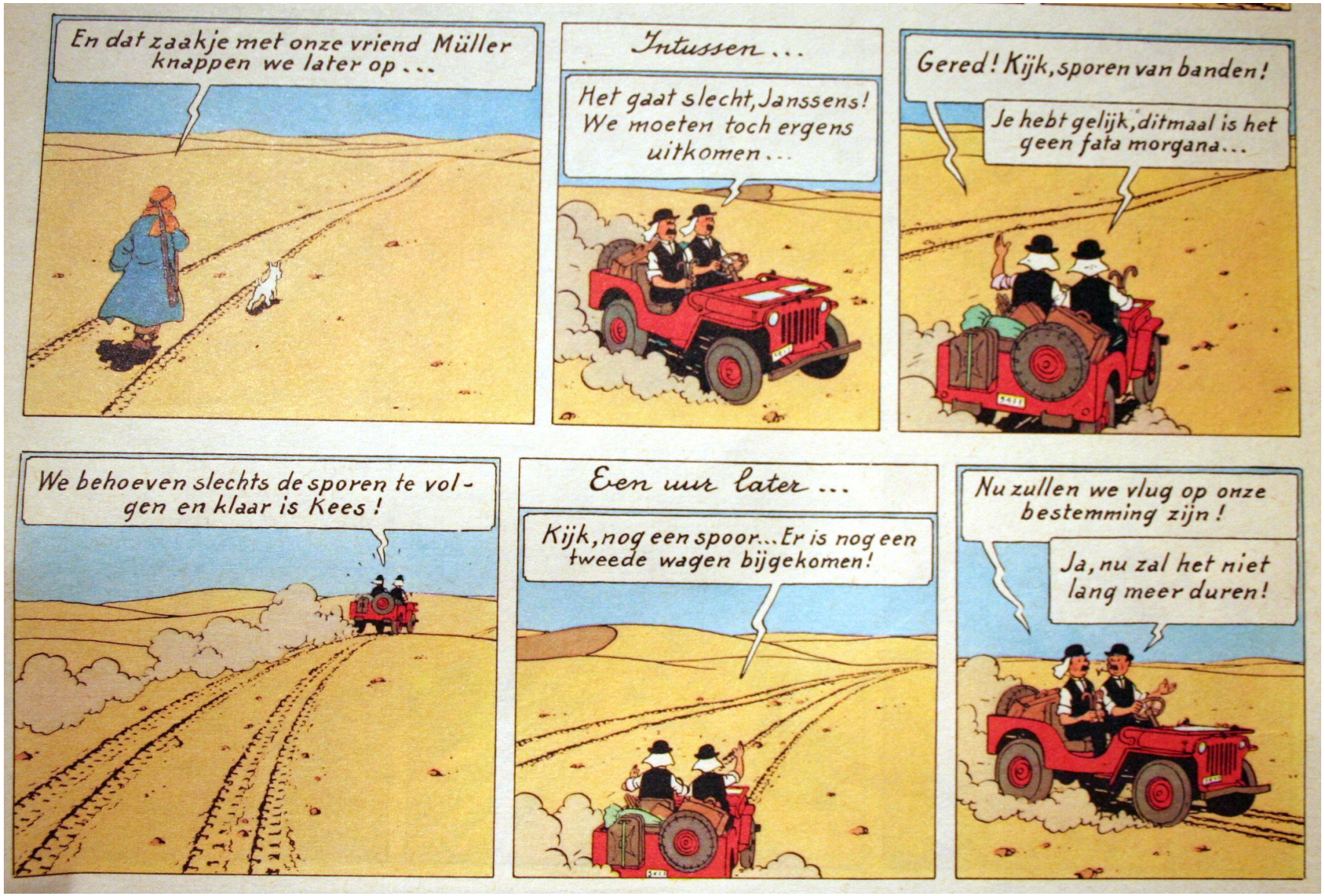
(Peter T. Geach, 1957, "On beliefs about oneself", Analysis 18,1, pp. 23–24)

Arthur Prior

"One says, e.g. "Thank goodness that's over!", and not only is this, when said, quite clear without any date appended, but it says something which it is impossible that any use of a tenseless copula with a date should convey. It certainly doesn't mean the same as, e.g. "Thank goodness the date of the conclusion of that thing is Friday, June 15, 1954", even if it be said then. (Nor, for that matter, does it mean "Thank goodness the conclusion of that thing is contemporaneous with this utterance". Why should anyone thank goodnes for that?)"

(Arthur N. Prior, 1959, "Thank goodness that's over", Philosophy 34, pp. 12–17)

Jansen en Janssen



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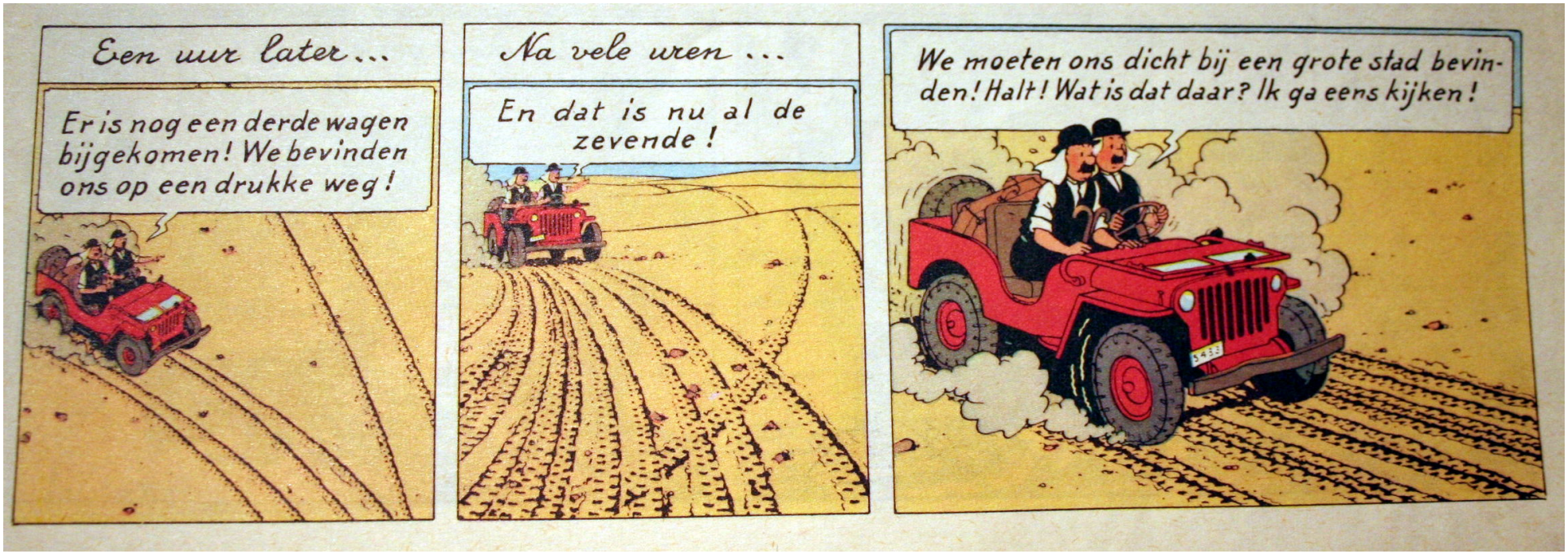


Heimson and Hume by Perry

"Let us imagine David Hume, alone in his study, on a particular afternoon in 1775, thinking to himself, "I wrote the Treatise." Can anyone else apprehend the thought he apprehended by thinking this? First note that what he thinks is true. So no one could apprehend the same thought, unless they apprehended a true thought. Now suppose Heimson is a bit crazy, and thinks himself to be David Hume. Alone in his study, he says to himself, "I wrote the Treatise." However much his inner life may, at that moment, resemble Hume's on that afternoon in 1775, the fact remains: Hume was right, Heimson is wrong. Heimson cannot think the very thought to himself the Hume thought to himself, by using the very same sentence."

(John Perry, 1977, "Frege on Demonstratives," Philosophical Review 86, 474–497)

Heimson and Hume by Lewis

"The first problem is that Heimson *couldn't* be Hume. ... The second problem arises when we ask why Heimson is wrong. He believes he is Hume. Hume believed that too. Hume was right. If Hume believed he was Hume by believing a proposition, that proposition was true. Heimson believes just what Hume did. But Heimson and Hume are worldmates. Any proposition true for Hume is likewise true for Heimson. So Heimson, like Hume, believes he is Hume by believing a true proposition. So he's right. But he's not right. He's wrong, because he believes he's Hume and he isn't."

(David K. Lewis, 1979, "Attitudes *De Dicto* and *De Se*," The Philosophical Review, 88, 513–543)

Kripke's "A Puzzle About Belief" (1979)

- "Suppose Pierre is a normal French speaker who lives in France (...). Of course he has heard of that famous distance city London (which he of course calls '*Londres*') (...). So he says, in French, 'Londres est jolie." On the basis of his sincere French utterance, we will conclude: (4) Pierre believes that London is pretty."
- "Later, Pierre, through fortunate or unfortunate vicissitudes, moves to England, in fact to London itself (...). So he is inclined to assent to the English sentence: (5) London is not pretty."
- "Of course he does not for a moment withdraw his assent from the Frenche sentence, "*Londres est jolie*"."
- "But it is clear that Pierre (...) is in no position to see, by logic alone, that at least one of his beliefs must be false." (p. 254–5)

Quine on Ralph and Ortcutt

Takes this one first.

(1) Ralph believes that the man seen on the beach is not a spy.
The man seen on the beach is Ortcutt.
Ralph believes that Ortcutt is not a spy.

Quine on Ralph and Ortcutt

Now take this one.

(2) Ralph believes that the man with the brown hat is a spy.
The man with the brown hat is Ortcutt.
Ralph believes that Ortcutt is a spy.

Quine on Ralph and Ortcutt

So we have.

(1) Ralph believes that the man seen on the beach is not a spy.
The man seen on the beach is Ortcutt.
Ralph believes that Ortcutt is not a spy.

(2) Ralph believes that the man with the brown hat is a spy.
The man with the brown hat is Ortcutt.
Ralph believes that Ortcutt is a spy.

Collect the results.

(3) Ralph believes that Ortcutt is a spy and not a spy.

Notional and Relational Beliefs

- Notional believe$_1$, a relation of someone believing a sentence true.
- Relational believe$_2$, a relation of someone believing a predicate true of an individual.
- Relational believe$_3$, a relation of someone believing a relation expression true of a pair of individuals.
- Relational believe$_4$, ...

Conjunction and Exportation (1)

- $B_1(a, \phi(t)) \models B_2(a, z(\phi(z)), t) \models \exists x B_2(a, z(\phi(z)), x)$

(1) Ralph believes$_1$ the man seen on the beach is not a spy.

(1′) Ralph believes$_2$ z(z is not a spy) of Ortcutt.

(2) Ralph believes$_1$ that the man with the brown hat is a spy.

(2′) Ralph believes$_2$ z(z is a spy) of Ortcutt.

- $B_1(a, \phi) \wedge B_1(a, \psi) \models B_1(a, \phi \wedge \psi)$

(3) Ralph believes$_1$ (*tMSotB* is not a spy . *tMwtBH* is a spy).

Conjunction and Exportation (2)

- $B_2(a, z(\phi), y) \wedge B_2(a, z(\psi), y) \not\models B_2(a, z(\phi \wedge \psi), y)$

(3) Ralph believes$_1$ (*tMSotB* is not a spy . *tMwtBH* is a spy).

√ Ralph believes$_2$ z(*z* is not a spy . *tMwtBH* is a spy) of O.

√ Ralph believes$_2$ z(*tMSotB* is not a spy . *z* is a spy) of O.

??? Ralph believes$_2$ z(*z* is not a spy . *z* is a spy) of O.

√ Ralph believes$_3$ wz(*w* is not a spy . *z* is a spy) of O and O.

(3′) Ralph does not believe$_2$ z(*z* is not a spy . *z* is a spy) of O.

- *Believe*, infinitely ambiguous?

David Kaplan, Quantifying In (1)

- Against exportation:
  - John believes that the one who is going to win will be the winner.
  - About the one who is going to win, John believes that he will be the winner.

- Against nominalism:
  - ? Nine is such that the result of writing it followed by "is greater than five" is analytic.
  - ! Nine is such that Hegel believed it to be greater than five.

  - ? $\exists\alpha$ ["α is greater than five" is analytic]
  - ? $\exists r$ [Hegel believes "r is greater than five"]

David Kaplan, Quantifying In (2)

- My own view is that Frege's explanation, by way of ambiguity, of what appears to be logically deviant behaviour of terms in intermediate contexts is so theoretically satisfying that if we have not yet discovered or satisfactorily grasped the peculiar intermediate objects in question, then we should simply continue looking. (p. 119)
- Quine suggests that by a harmless shift in idiom we can replace talk of meanings by talk of expressions, thus achieving ontological security. I agree, but the parallel can be exploited in either direction: as suggested by the introduction of meaning marks, we might also try to replace talk of expressions by talk of meanings, thus achieving ontological insight." p. 121

- $\exists\alpha[\Delta(\alpha, 9)$ & $\mathcal{N}\alpha$ is greater than five$]$
- $\exists\alpha[\Delta(\alpha, o)$ & $\mathcal{B}(r, \alpha$ is a spy$)]$

David Kaplan, Quantifying In (3)

- The account still faces the exportation problem.
- "The parallel inadequacies of our versions of **Nec** and **Bel** are now apparent. Our analyses credit nine with an excess of essence and put Ralph *en rapport* with an excess of individuals.' (p. 128)
- Using standard names for abstract objects in necessity statements.
- In belief reports, in stead of $\Delta(\alpha, o)$ use $R(\alpha, o,\text{Ralph})$, α represents o to Ralph, with:
  1. α denotes o (qualitative);
  2. α is a name *of* o for Ralph (causal);
  3. α is sufficiently vivid.
- Exportation constrained by properties of the representing belief state.

Aloni's Point of Departure

- Kripke models; $\Box$ is belief; logical omniscience; deductive closure; fixed domain; rigid variables; non-rigid constants
- $\models \Box\phi \rightarrow \Diamond\phi$ (seriality/consistency)
  $\models \Box\phi \rightarrow \Box\Box\phi$ (transitivity/positive introspection)
  $\models \Diamond\phi \rightarrow \Box\Diamond\phi$ (euclidicity/negative introspection
  $\models \exists x\Box\phi \rightarrow \Box\exists x\phi$ (fixed domain/importation)
- $\not\models \Box\phi \rightarrow \phi$ (belief does not imply truth)
  $\not\models \Diamond\Box\phi \rightarrow \phi$ (idem dito)
  $\not\models \Box\exists x\phi \rightarrow \exists x\Box\phi$ (no exportation)
- $\models (\phi(t) \rightarrow \exists x\phi(x))$
  $\gg$ if ϕ is non-modal (EG1) and if t is a variable (EGv)
  $\models (t = u \rightarrow (\phi \leftrightarrow [t/u]\phi))$
  $\gg$ if ϕ is non-modal or t and u variables (SI1, SIv)
- $\models (x = y \rightarrow \Box(x = y))$ (LIv)
  $\models (x \neq y \leftarrow \Box(x \neq y))$ (CLNIv)

Contingent Identity Systems

- In order to solve Quine's problem, and Kripke's problem,
- let quantifiers (variables) range over individual concepts.

- Quantification over all individual concepts (CIA)?
  - Raises the (not even shortest) spy problem. (Exportation.)

- Quantification over subsets of individual concepts (CIB)?
  - Threatens existential generalization.

David Kaplan (CIB-type)

- Quantification over concepts which suitably represent individuals.
  - The existence of a suitable representation α of b such that $\Box\phi(\alpha)$ is a necessary and sufficient condition for a de re belief such that $\exists x(x = b \wedge \Box\phi(x))$
- Maria Aloni: it is neither necessary nor sufficient.

Odette's Lover (Andrea Bonomi)

Thanks to some clues, Swann has come to the conclusion that his wife Odette has a lover, but he has no idea who his rival is, although some positive proof has convinced him that this person is going to leave Paris with Odette.

So he decides to kill his wifes lover, and he confides his plan to his best friend, Theo. In particular, he tells Theo that the killing will take place the following day, since he knows that Odette has a rendezvous with her lover. (. . .)

Unknown to Swann, Odettes lover is Forcheville, the chief of the army, and Theo is a member of the security staff which must protect Forcheville. During a meeting of this staff to draw up a list of all the persons to keep under surveillance, Theo (who, unlike Swann, knows all the relevant details of the story) says:

Odette's Lover (Continued)

"Swann wants to kill the chief of the army."

meaning by this that Swann is to be included in the list. The head of the security staff accepts Theos advice. (...) Swann is kept under surveillance. A murder is avoided.

- Swann does not believe about the chief of the army that he is Odette's lover.
- Swann wants to kill Odette's lover.
- Odette's lover is the chief of the army.

- The concept of Odette's lover doesn't seem to be a suitable representation of the chief of the army for Swann.
- Still Theo accurately ascribes the de re desire to Swann.

- Kaplan's condition is not necessary.

Susan's Mother (Bas van Fraassen)

"Susan's mother is a successful artist. Susan goes to college, where she discusses with the registrar the impact of the raise intuition on her personal finances. She reports to her mother."

S: He said that I should ask for a larger allowance from home.

M: He must think I[1] am rich.

S: I don't think he has any idea who[3] you[2] are.

M: I[4] am your mother.

1 "I" is 'your mother'

2 "you" is indexical

3 "who" is 'the famous artist'

4 "I" is indexical

Susan's Mother (continued)

(4) He must think I am rich.

- The registrar does not seem to have a suitable representation of Susan's mother.
- Still the mother correctly asribes a belief to him about her.
- Again, Kaplan's condition is not necessary.
- If, to explain (4), the concept "Susan's mother" is a suitable representation after all, we should conclude that:

  (4) He knows I am your mother.

  should be true as well.

Ortcutt Revisited

- We may conclude from:
  - Ralph believes that the man seen on the beach is not a spy.

  that:
  - Ralph believes that Ortcutt is not a spy.

  and, hence, that:
  - Ralph does not believe that Ortcutt is a spy.
- But then the concept of the man with the brown hat is not sufficient to rule this out.

- So that Kaplan's condition is not sufficient.

Findings from the Above

- The sentences are not ambiguous.
- Their interpretation is context-sensitive.
- The concepts quantified over are not determined by the state of the agent characterized.
- They are the ones relevant for the interlocutors.

- Quantification is over individuals under some conceptualization of the domain.
- A conceptualization is a set of concepts in which each individual is represented once.
- Different contexts and different quantifiers may draw from different conceptualizations.

Conceptual Covers (The Implementation)

- Quantification is relative to a contextually given conceptual cover (CC).
- A conceptual cover is an exhaustive and uniquely identifying conceptualization of the domain.

- Models $\langle W, R, D, I, C\rangle$, with C a set of CC's (a set of sets of IC's);
- $\forall CC \forall w, d \exists! c \in CC\colon\ c(w) = d$;
- indexed variables x_n and assignments $g\colon\ N \rightarrow C$ and $V_n \rightarrow g(n)$;
- so, $\forall n, x\colon\ g(n) \in C$ and $g(x_n) \in g(n)$;
- $[x_n]_{M,w,g} = g(x_n)(w)$;
- $M, w, g \models \exists x_n \phi$ iff $\exists c \in g(n)\colon\ M, w, g[x_n/c] \models \phi$

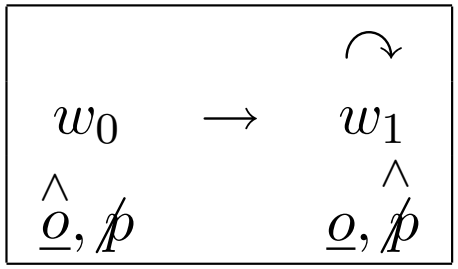
Conceptual Covers (An Example)

(A) The players on the field of the Amsterdam Arena.

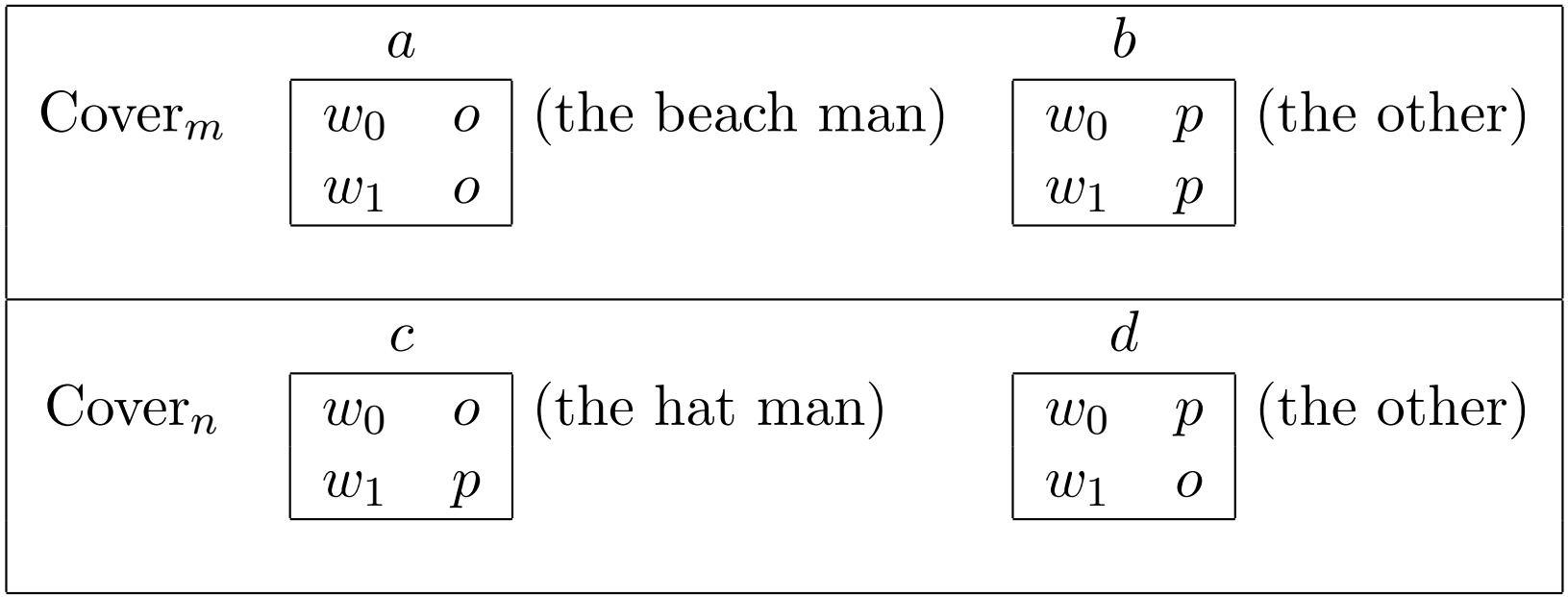
(B) The names of the players on the booklet handed out.

- Under (A) and not under (B) you may have believes about who scores the winning goal.
- Under (B) but not under (A) you may have believes about who was born in Betondorp.

Ortcutt and Portcutt

- 

(_:= on-beach, ^:= with hat, /:= is spy)

- 

- $\exists x_n(x_n = o \wedge \Box Sx_n)$ (with $g(n) = \{c, d\}$ & $x_n := c$)
- $\exists x_m(x_m = o \wedge \Box \neg Sx_m)$ (with $g(m) = \{a, b\}$ & $x_m := a$)
- $\exists x_n(x_n = o \wedge \exists x_m(x_m = o \wedge \Box(Sx_n \wedge \neg Sx_m)))$ (as above)

Some Typical Facts

- $\exists x_n \phi \not\models \exists x_m [x_m / x_n] \phi$, but
  $\exists x_n \phi \models \exists y_n [y_n / x_n] \phi$
- $\phi(t) \not\models \exists x_n \phi(x_n)$, but
  $(\phi(t) \wedge \exists x_n \Box(t = x_n)) \models \exists x_n \phi(x_n)$
- $\phi(y_n) \models \exists x_n \phi(x_n)$ (always) and
  $x_n = y_n \models (\phi(x_n) \leftrightarrow \phi(y_n))$ (always)
- Any CC model with one cover in C is isomorphic to a classical MPL model.

Knowing Who (One Remark)

- You know who comes if you know of everybody who comes that (s)he comes and of everybody who doesn't come that (s)he doesn't come. Classical dilemma:
  - If α is rigid, everybody knows who α is.
  - If α is not rigid, it cannot be used to answer the question who come.
- Solution with Conceptual Covers.
- *WH*-questions are always relative to a conceptualization of the domain.
- Odette's husband knows whom he is going to kill (Odette's lover) and whom he is not going to kill (the chief of the army).
  - Relative to one cover one statement is true and the other false, or the other way around.
- John knows who Bush is because he knows he is the president of the US.
  - Good in a class-room situation;
  - no good on a fund raising party.

A Quinean Argument Against Formal Semantics

- We may wonder about the logic of belief.
  - If $\phi \not\equiv \chi \not\equiv \psi$ then when does $B_x\phi, Bx\psi \models B_x\chi$?
- If there is a logic, then someone (x) may question it.
  - Maybe, unwillingly, $B_x\phi \models B_x\psi$
  - but this doesn't entail $B_xB_y\phi \models B_xB_y\psi$.
- But then there is no logic of belief.
- But then there is no logic.