Muskens Ch. 9: Names

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Goal of this chapter: To understand pairs like the following, and why their cognitive values differ; although these intuitively have the same reference (and the same truth value), they still differ in meaning.

(1) a. Hesperus is Hesperus.
    b. Hesperus is Phosphorus.

M Mill's theory (popularized by Kripke): The meaning of a proper name depends only on its referent.

- Coreferential names, then, cannot differ in meaning.
- The property of being a property of some thing is uniquely determined by that thing itself (i.e., the property of being a property of John is uniquely determined by John).

Unfortunately, this view leads to unwanted predictions about English – i.e., that the following are synonymous:

(2) a. The Ancients believed that Hesperus was Phosphorus.
    b. The Ancients believed that Hesperus was Hesperus.

To be done:

- Analyze the Fregean argument against Mill's hypothesis: A strictly Millian view is incompatible with having both Leibniz's Law and taking the judgments of speakers seriously.
- Go over Kripke's attempt to refute that argument.
- Reformulate a weak version of the theory that names are descriptions, and then defend it. This will necessitate dropping part of Russell's theory (in particular, dropping the description theory of reference), and tweaking our theory of accessibility relations.

The Millian theory of names

L *Frege's Principle*: Synonyms are intersubstitutable without change in meaning.

- This is a critical assumption in the proof against Mill.
- It is closely related to the principle of *Compositionality*.

C *Compositionality*: The meaning of a complex expression is a function of the meaning of its direct parts.

- L can be shown to follow from C.
- L is also an instance of Leibniz's Law – i.e., it is the theory of meaning's basic relation of congruence.
    - $A = B \rightarrow [A/x]C = [B/x]C$

L by its own cannot discriminate between any meanings. We must also have the following principle if we want semantics to be an empirical discipline:

O If ordinary speakers judge that two sentences may differ in truth value, then these sentences are not synonymous.

The argument against Mill

Speakers judge that the sentences in (2) can have differing truth values.

- Thus, by L these names must not be synonymous (since 'Phosphorus' is substited by 'Hesperus').
- However, since the two are coreferential, this contradicts M.
- No theory can be Millian, compositional, and empirically adequate.
    - We cannot have both M and L.

We could conclude that if we put two expressions into a sentence frame and get different truth values, then they are not synonymous.

- This can lead to problems with pairs like 'bachelor' and 'unmarried man' or 'doctor' and 'physician.'
- These can be predicted to not be synonymous, because of epistemic/doxastic contexts; but in some way we still want them to be synonyms (i.e., in modal contexts).
    - This will be the focus of the last half of the chapter.
- If coreferential names can be interchanged in a context without changing their meaning, then that context is *Shakespearean* – i.e., *S* holds:

S *Substitutivity*: Coreferential names are interchangeable without change in meaning.

Kripke's argument against Frege

We can distinguish weaker forms of Millianism, where only some contexts (modal necessity, etc.) are Shakespearean, whereas contexts like epistemic necessity should be non-Shakespearean.

Later, Kripke goes more radical and tries to show that *S* need not be rejected.

- He shows that the Millian theory of names isn't necessary to derive Hesperus-Phosphorus paradoxes.
- He introduces two principles which will derive similar paradoxical conclusions without any Millian assumptions.

D A *disquotational principle*: If a normal English speaker, on reflection, sincerely assents to 'p,' then he believes that *p*.

Tr *A principle of translation*: If a sentence of one language expresses a truth in that language, then any translation of it into any other language also a truth (in that other language).

With *D* and *Tr*, we can obtain paradoxical results.

- Pierre is a Frenchman who lives in London and thinks it's not very pretty. He is also unaware that *Londres* in French refers to London.
- He hears in France that *Londres est jolie*, and assents to this.
- Pierre croit que Londres est jolie.
- And yet: Pierre believes that London is not very pretty.
- We must ascribe inconsistent beliefs to Pierre, even though there is nothing wrong with his reasoning capabilities.

Kripke argues that the refutation of Substitutivity here is based on acceptance of *D*, and that *D* alone is enough to obtain paradoxical results.

- Strictly speaking, we do not need to defend *D*, because we didn't use *D* in the proof against Mill's theory – we used *O*.
- *D* pertains only to belief sentences and can be rejected without damaging the rest of the theory. However, accepting *O* suggests acceptance of *D*.

Kripke's argument that *D* alone is a problem: Say that Peter has heard about the musician Paderewski and asserts 'Paderewski is a fine musician.' We can conclude 'Peter believes that Paderewski is a fine musician.' Peter has also heard about a Paderewski who is a politician, who is actually the same person as the musician; however, Peter doesn't make a connection between them. Since he doesn't think much of the musical capabilities of politicians, he asserts 'Paderewski is a bad musician,' from which we may infer 'Peter believes that Paderewski is a bad musician.' Paradox!

- A point: There is a difference between Peter's English and ours.
  - Peter has two Paderewskis to our one. We can apply *D* to Peter's words, but they will be sentences in his language, not ours.
- There is no inconsistency to be ascribed to Peter here.
- The problem is *Tr*: Translation does not always preserve truth, especially in intensional contexts.
  - In intensional contexts, everyone has to make the conventional connections for truth to be preserved.
- So, the argument against Frege's argument against *M* fails.

A defense of the view that names are descriptions

If the meaning of a name is not the thing named, then what is it?

- Russell – Theory of Descriptions
  - Names are definite descriptions in disguise: Socrates is 'the philosopher who drank the hemlock'
- If Hesperus is the planet that appears at dusk, and Phosphorus is the planet seen at dawn, then 'Hesperus is Phosphorus' will be contingent.
- This also allows to get scope sensitivity of proper names – i.e., 'Zeus isn't bald" has two readings, one where Zeus exists and one where he doesn't.
  - Likewise, 'Mary thinks that John is Bill': Mary thinks of John that he is Bill, or Mary thinks [John is Bill].

Naming versus reference

The description theory of naming must be divided from description theory of *reference*; the two are often confused.

Description theory of the reference of names: Each speaker A associates with each proper name X of the language a property ϕ such that the following hold:

1. A believes that X is a ϕ
2. A believes ϕ to single out some individual uniquely
3. If there really is some unique individual satisfying ϕ then that individual is the referent of X
4. Otherwise X does not refer.

So, if we associate 'Plato' with 'teacher of Aristotle', believing that Plato and only Plato has that property, then we actually refer to Plato when using 'Plato' iff our beliefs are correct and Plato really is that unique person.

Counterexample from Kripke: When asked 'Who was Cicero?' we can only answer 'a famous Roman orator,' and still use the name to refer to Cicero – even if we don't believe that 'famous Roman orator' singles out only one person.

Instead, we want the *logical* version of the Description Theory of naming: The theory that the meaning (not the reference) of a name is a description.

- Some immediate problems: 'Necessarily Aristotle is Aristotle' is logically true, but we want 'Necessarily Aristotle was the teacher of Alexander' to be contingent on whether or not Aristotle was a teacher.

Quine to the rescue:

- 'We could have appealed to the irreducible attribute of being Pegasus, adopting ... 'pegasizes.'

- So, Pegasus is two-part:
  (a) that the name is identified with the description 'the pegasizer' and
  (b) that 'pegasizer' is identified with the predicate 'winged horse captured by Bellerophon'.
- Quine only accepts (a). (a) is compatible with description theory, but with none of the problems associated with (b).
- The intuition is that names are descriptions – they don't stand in for other descriptions.
- Russell's theory works so well because it gives names the form of descriptions, not because it equates the meaning of a name with the meaning of a particular description in a language.

So, PNs are no longer type-lifted individual constants; instead they are terms in the form of definite descriptions (recall our earlier formulation):

(3) $\mathbf{Aristotle}^{\circ} = \lambda P \lambda i \exists x (\forall y (Aristotle_{<es>} yi \leftrightarrow x = y) \wedge Pxi)$

Comparison with full Description Theory:

- This theory is weaker.
- If the full Description Theory wanted to accept the account this far, it would also need to add the axiom that equates the 'Aristotleizer' predicate with the predicate 'teacher of Alexander.'

(4) $Aristotle = \lambda x \lambda j \exists y (\forall z (Alexanderzj \leftrightarrow z = y) \wedge teachxyj)$

- This would lead to incorrect predictions, like the following being equivalent:
  Necessarily Aristotle is Aristotle
  Necessarily Aristotle is the teacher of Alexander.

However, the theory may be too weak still. So, let's stipulate that the predicates are partial functions:

(5) $\forall i \exists x \forall y (\delta yi \twoheadrightarrow (x = y))$
where δ is $Aristotle, John$, etc.

We can now write $\mathbf{Aristotle}^{\circ}$ as $\lambda P \lambda i \exists x (Aristotlexi \wedge Pxi)$.

(6) Tully is Cicero = Tully [be Cicero]
$\lambda i \exists x (Tullyxi \wedge Ciceroxi)$

(7) Jones knows that Tully talks = Jones [know that[Tully talk]]
$\lambda i \exists x (Jonesxi \wedge \forall j (Kxji \rightarrow T \exists y (Tullyyj \wedge talkyj)))$

(8) Jones knows that Cicero talks = Jones [know that[Cicero talk]
$\lambda i \exists x (Jonesxi \wedge \forall j (Kxji \rightarrow T \exists y (Ciceroyj \wedge talkyj)))$

So, Tully may talk at all of Jones' epistemic alternatives, but might not be Cicero at all of them. We can also get non-trivial scope interactions:

(9) Mary believes that John is Bill. = [John[Mary[believe that[he_0[be Bill]]]]
$\lambda i \exists xy (Johnxi \wedge Maryyi \wedge \forall j (Byji \rightarrow TBillxj)$

(10) Mary believes that John is Bill. = [Mary[believe that[John [be Bill]]]]
$\lambda i \exists y(Maryyi \wedge \forall j(Byji \rightarrow T\exists x(Johnxj \wedge Billxj)))$

(11) Zeus does not walk = [Zeus walk]
$\lambda i \neg \exists x(Zeusxi \wedge walkxi)$

(12) Zeus does not walk = [Zeus [he$_0$ walk]]
$\lambda i \exists x(Zeusxi \wedge \neg walkxi)$

Strengthening the theory

This works wonderfully for epistemic and doxastic contexts – but what about modal contexts?

- 'Hesperus is Phosphorus' seems to entail 'Necessarily Hesperus is Phosphorus.'
- While the standard theory predicts that all intensional contexts are Shakespearean, ours predicts that none of them are – a problem.
- We must strengthen the logic without collapsing it into the old theory.
- Notice that we have a way to do this: The necessity we need is not logical necessity, but metaphysical necessity (i.e., names that actually corefer but do not have the same bearer are logically, but not metaphysically, possible).

A tangent into multimodal logics:

- Instead of having only one intensional operator, multimodal logics have many – say $[i]$ for each element i of some index set I.
- Frames are tuples $< W, \{R_i | i \in I\} >$ comprising a set W with a collection of binary relations R_i over that set.
- Models for this logic are tuples $< F, V >$ where F is a frame and V a valuation function assigning a subset of W to each propositional constant.
- $M \models_w [i]\phi$ iff for all $w' \in W, wR_iw'$ implies $M \models_{w'} \phi$
  - A formula ϕ is valid if $M \models_w \phi$ holds for all M and w.

We can get stronger logics by imposing extra constraints on R_i – i.e., if we want $[i]\phi \rightarrow [j]\phi$ to hold, then we should demand that $R_j \subseteq R_i$.

- A constraint we would like: An operator $[i]$ that quantifies over all elements of W by stipulating that the corresponding accesibility relation R_i is the universal relation $\{< w, w' > | w, w' \in W\}$, where we will call this the outer operator $\Box$.

(13) $M \models_w \Box\phi$ iff $M \models_{w'} \phi$ for all $w' \in W$.

Of course, problems follow.

(14) a. Necessarily Donald is a duck.
b. Everybody knows that Donald is a duck.

- Objects may have non-trivial essential properties (for example, membership of a natural kind).

- If an animal is a duck, then it is a duck by necessity; however, this does not mean that (14-b) follows from (14-a).
- So, either there are no essential properties or 'necessarily' is not an outer operator.
- Let's just treat 'necessarily' as a rank-and-file operator.

Let us write $\rho_{<ss>}$ for the new accessibility relation (i.e., the universal relation we defined above) and redefine:

(15) a. **necessarily**$^\circ = \lambda p \lambda i \forall j(\rho ji \rightarrow Tpj)$
b. **possibly**$^\circ = \lambda p \lambda i \exists j(\rho ji \wedge Tpj)$

- Epistemics/doxastics will not contain the relation ρ.

We also need some axioms:

AX17 $\forall i(\rho ii = \top)$: All indices are accessible from themselves.
AX18 $\forall ijk((\rho ij \wedge \rho jk) \twoheadrightarrow \rho ik)$: Accessibility is transitive.
AX19 $\forall ij(\rho ij \twoheadrightarrow \rho ji)$: Accessibility is commutative.

Unwanted entailments are blocked:

(16) Necessarily Donald is a duck. = [necessarily [Donald [be [a duck]]]]
$\lambda i \forall j(\rho ij \rightarrow T\exists x(Donaldxj \wedge duckxj))$

(17) Every man knows that Donald is a duck. = [[every man] [know that [Donald [be [a duck]]]]]
$\lambda i \forall x(manxi \rightarrow \forall j(Kxji \rightarrow T\exists y(Donaldyj \wedge duckyj)))$

These derivations are blocked because there may be epistemically possible situations that are not metaphysically possible.

Sentences of the form 'necessarily S' should be counted as weakly valid. To get this, we need a meaning postulate:

MP5 $\lambda i \forall x(ophtalmologistxi = oculistxi)$

If we stipulate that meaning postulates such as $\lambda i \forall x(ophtalmologistxi = oculistxi)$ must hold not only in $w_@$ but in all accesible situations as well, no situation is accessible unless it conforms to our postulates:

MP6 $\lambda i \forall j(\rho ji \rightarrow \pi j)$ if π is a meaning postulate other than this one.

- This means that $\lambda i \forall j(\rho ji \rightarrow worldj)$ is a postulate.
- Thus, all accessible situations are total and coherent.
- We can also stipulate that natural kinds have the same extension in all accessible worlds:

(18) $\lambda i \forall j(\rho ji \rightarrow \forall x(duckxi = duckxj))$

- A predicate with the same extension in all situations = *absolutely rigid*.
- A predicate that has the same extension in metaphysically accessible worlds is *relatively rigid*.

- So, a name is absolutely (relatively) rigid if its underlying predicate is absolutely (relatively) rigid.
- May as well assume relative rigidity for names.

AX20 $\forall ij(\rho ji \rightarrow \forall x(\delta xi = \delta xj))$, (Relative Rigidity)
where δ is $Aristotle, Bill$, etc.

So 'Necessarily Hesperus is Phosphorus' follows from 'Hesperus is Phosphorus,' but with no effect on epistemic and doxastic contexts.

(19) Hesperus is Phosphorus = [Hesperus [be Phosphorus]]
$\lambda i \exists x(Hesperusxi \wedge Phosphorusxi)$

(20) Necessarily Hesperus is Phosphorus = [necessarily [Hesperus [be Phosphorus]]]
$\lambda i \exists j(\rho ji \rightarrow T\exists x(Hesperusxj \wedge Phosphorusxj))$

- This lets us get some contexts to be Shakespearean, and others not to be.
- Basically, in the standard theory, ρ is taken to be universal.
- ρ is not for ours, i.e. we reject Universality.

U *Universality*: $\forall ij(\rho ji = \top)$

An argument against Universality:

- If you looked at a Babylonian astronomer's map, Hesperus and Phosphorus would be drawn in different positions.
- This is an incorrect model, but still a model that can bused to talk about Babylonian beliefs about the night sky.
  - We definitely want this model available to us so that we can talk about belief sentences.
- However, the maps are metaphysically impossible (even though they're logically impossible).
  - We don't want the map to be metaphysically accessible – just doxastically/epistemically accesible.

Appendix

The assumptions used in this chapter:

1. M: Mill's theory – The meaning of a proper name depends only on its referent.
2. L: Frege's Principle (an instance of Leibniz's Law) – Synonyms are intersubstitutable without change in meaning.
3. C: Compositionality – The meaning of a complex expression is a function of the meaning of its parts.
4. O: If ordinary speakers judge that two sentences may differ in truth value, then these sentences are not synonymous.

5. S: Substitutivity – Coreferential names are interchangeable without change in meaning.

6. D: The Disquotational Principle – If a normal English speaker, on reflection, sincerely assents to ‘p,’ then he believes that p.

7. Tr: The Principle of Translation – If a sentence of one language expresses a truth in that language, then any translation of it into any other language is also a truth (in that second language).