Logical Form
Logical form and grammatical form

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- Donald Davidson considered cases of *adverbial dropping*.
- His event-analysis renders them model-theoretically valid.
- Other valid arguments are merely *material* and can be ignored.
- Alex Oliver gives us good reason to think his distinction is untenable.
- Davidson's view developed from *realism* to an *instrumentalism* about logical form, in response to James Cargile.

Talk outline

Received wisdom

- Davidson and Russell offer forms that deviate from grammar.
- Hence 'grammatical form misleads as to logical form'.
- Consider Russell in *Introduction to Mathematical Philosophy*:

> *Misled by grammar, the great majority of those logicians who have dealt with this question [of empty terms] have dealt with it on mistaken lines. They have regarded grammatical form as a surer guide to analysis than, in fact, it is. ... 'I met Jones' and 'I met a man' would count traditionally as propositions of the same form, but in actual fact they are of quite different forms. (1919: 168)*

Received wisdom

- Also Quine in *Methods of Logic*:

  one of the misleading things about ordinary language is that the word 'something' masquerades as a proper name (1950: 84)

- David Kaplan also picks up on the quantifier/name grammatical confusion:

  In ordinary language, replacements which do not change the apparent grammatical form of a sentence, for example replacing a proper name with 'someone', may well introduce or obliterate relations of logical consequence between the affected sentences, thus indicating a change in logical form. (1970: 235-6)

The slogan

- Superficially similar English sentences can differ in logical form.
- Sentences which appear to involve the same grammatical categories can have very different logical relations.
- In this sense, we have been *misled* by the grammar.
- Let's consider the example Russell, Quine and Kaplan discuss: proper names vs quantifier phrases.

Case study: proper names and quantifier phrases

- Quantifier phrase: quantifier + general term
- E.g. 'everyone', 'someone', 'for some', 'for all'
- Since Frege, these get formalised using quantifier-variable notation: $\forall x$, $\exists x$.
- Before Frege's insight, philosophers were misled by the grammatical similarity of quantifier phrases and proper names.
- The sentences

    Nobody ran faster than me
    Jane ran faster than me

  have a visual similarity.
- The subject place is instantiated by a quantifier phrase in the first sentence and a proper name in the second.
- But quantifiers and names behave very differently in logic.

Meinong

- This similarity led some to treat quantifier phrases as names.
- On this view, quantifier phrases have referents.
- The major figure here was Alexius Meinong (1853–1920).
- Attempts to find referents for quantifier phrases are known as *Meinongian*.
- This attribution is largely due to Russell, who tells us in 'On Denoting' that Meinong

  > *regards any grammatically correct denoting phrase as standing for an object (1905: 45)*

- Denoting phrases include 'a man', 'some man', 'any man', etc.

Poor old Meinong

- ▶ Russell was interested in:

    the existential use of the indefinite article ('I met a man')
    the definite article in definite descriptions ('the present King of France is bald').

- ▶ Meinong cared about the definite article's generic use ('the whale is a mammal').

- ▶ Similarly, the indefinite article ('a whale is a mammal')

- ▶ What comes before our mind when we consider *generic* objects?

- ▶ These *types* are never offered by Meinong as the referents of quantifier phrases.

- ▶ For more on misunderstandings of Meinong, see Oliver's 'A few more remarks on logical form' (1999).

Talk outline

Quantifier phrases as proper names

- Why think that quantifier phrases and proper names are grammatically the same?
- Mark Sainsbury in his book *Russell* describes:

  > *our tendency to regard quantifers and descriptions as names. That we do indeed have the tendency (even if we are not Meinong) is shown by the fact that Lewis Carroll's jokes are funny. (1979: 139)*

Lewis Carroll

'I see nobody on the road', said Alice.
'I only wish I had such eyes', the King remarked in a
fretful tone. 'To be able to see Nobody! And at this
distance too!' ...
'Who did you pass on the road?' the King went on.
'Nobody', said the Messenger.
'Quite right', said the King: 'this young lady saw him
too'. (1872: 198)

Why the confusion?

- ▶ Michael Dummett explains the confusion:

    As far as the sentence-structure of natural language is concerned, signs of generality such as 'someone' and 'anyone' behave exactly like proper names – they occupy the same positions in sentences and are governed by the same grammatical rules; it is only when the truth-conditions or implicational powers of sentences containing them are considered that the difference appears. (1973: 20)

- ▶ Quantifier phrases and proper names are intersubstitutable *salva congruitate*.

Intersubstitutability

- *Salva congruitate = preserving grammaticality.*
  - Socrates is mortal
  - Someone is mortal
- Quantifier phrases and names appear to pass the test.
- This has led traditional grammars to place them in the same category.
- The category is *Subject* or *Noun Phrase*.

Intersubstitutability

- We find the same link made by Richmond Thomason:

    In English syntax, however, quantifier phrases and proper nouns behave in much the same way; it is difficult to find instances in which replacement of the one kind of expression by the other affects grammaticality. And according to grammatical tradition, proper names and quantifier phrases are both classified as noun phrases, so that 'John walks' and 'A man walks' are treated as having the same form. (Thomason 1974: 59)

Intersubstitutability

- And finally we find the same link in Peter Geach:

    If we turn from recent 'philosophical logic' to recent grammar, things are not much better. The sophistications of a computer age overlie ideas that might come straight out of Dionysius of Thrace and Priscian; indeed, Chomsky has expressly said that 'by and large the traditional views are basically correct, so far as they go'. Proper names and phrases like 'some man' are alike called Noun Phrases – whatever virtue there may be in the capitals – and are regarded as belonging to the same substitution class. (Geach 1968: 115-6)

Counterexamples

- Alex Oliver, in 'A few more remarks on logical form' (1999), that there are counterexamples:

Plural	All people are mortal / Socrates are mortal
Negation	Not everyone is absent / Not Alice is absent
Common noun	There's a Paris in Idaho / There's a some city in Idaho
Generic noun	The museum has a Picasso / The museum has a some painting
Epithet	Mighty Caesar conquered Gaul / Mighty some man conquered Gaul

Traditional grammar

- In English, quantifier phrases and proper names are not intersubstitutable *salva congruitate*.
- Oliver notes that this guide is peculiarly modern and philosophical: no canonical grammars use it.
- The test is usually *semantic*: a noun picks out an object.

Noun phrase

- What do traditional grammarians actually say about noun phrases?
- Where does the category come from?
- The OED says it first appears in logic, not grammar.
- Its first appearance is in Geach's review of Quine's *Methods of Logic*:

  > the space devoted to a reformulation of the old logic of terms...; learning to twist statements into the form of a copula between two noun-phrases can be positively harmful to a student's logical perceptiveness (1951: 424–5)

Subject

- How about the category of *subject*?
- Again, Mason's *English Grammar* suggests that the category comes from logic:

> *In grammar it is usual to employ the terms subject and predicate in a more restricted sense than in Logic. In Logic, the subject of a proposition is the entire description of that which is spoken of: the predicate is all that is employed to represent the idea which is connected with the subject. Thus, in 'This boy's father gave him a book,' the subject is 'this boy's father;' the predicate is 'gave him a book.' But in grammar, the single noun 'father' is called the subject, and 'gave' the predicate, the words connected with 'father' and 'gave' being treated as enlargements or adjuncts of the subject and predicate. (1874: 138)*

Morals

- We've considered the paradigmatic case of grammatical form misleading as to logical form.
- Substitution *salve congruitate* was supposed to be our guide.
- But quantifier phrases and names fail the test.
- And it looks like a poor test anyway.
- The test is a logicians' myth: grammarians don't do things this way.
- Grammatical form has *not* misled as to logical form.
- Quantifier phrases and proper names do not have the same grammatical form.

Talk outline

A logically perfect language

- It is often said that a *logically perfect* language is one where grammar and logic coincide.
- Formal languages are best candidates.
- Thus John Etchemendy (from 'The doctrine of logic as form'):

    In an artificially regimented first-order language, two sentences with identical structural properties always display similar logical properties ... in our first-order language the logical properties go hand in hand with surface grammatical structure, and we know that this is not the case in English. (1983: 320)

Propositional logic

- Etchemendy is wrong.
- There is sufficient evidence in TFL.
- TFL puts $\wedge$, $\vee$, $\rightarrow$ and $\leftrightarrow$ in the same grammatical category: *binary connectives*.
- So $P \wedge P$, $P \vee P$, $P \rightarrow P$ and $P \leftrightarrow P$ are all of the same grammatical form.
- But they are logically very different.
- In FOL, $\forall$ and $\exists$ are both grammatically *quantifiers*.
- Again, logically very different

Change the categories

- We could put $\wedge$, $\vee$, $\rightarrow$ and $\leftrightarrow$ in distinct grammatical categories.
- But what's the motivation?
- We'd have a logically perfect language, but trivially so.
- Even English could be *forced* to be logically perfect.
- The slogan 'grammatical form misleads as to logical form' seems to presuppose logically perfect languages.
- But are there any?

Gareth Evans on logical form

- In 'Semantic structure and logical form' (1976), Gareth Evans considers logically perfect languages.
- Some inferences, Evans writes, are distinctively *structural*:

  > the validity of some inferences is to be explained by reference to the meanings of the particular expressions occurring in them, while that of other inferences is due, rather, to the way in which the sentences are constructed out of their parts (1976: 199)

- $P \wedge Q \therefore P$ is valid, but not structurally so.
- Why? Because of structurally identical $P \vee Q \therefore P$.
- Are any arguments of TFL structurally valid, according to Evans?

Structural validity

- Evans thinks the only structurally valid arguments are one like

    $P \therefore P$

    $P \wedge Q \therefore P \wedge Q$

- Oliver shows that there are more:

    $P, Q, P * P \therefore P * Q$

    remains valid regardless of the truth-function assigned to *.

- This argument is valid in virtue of the form

    $A, B, AcA \therefore AcB$

    where c ranges over truth-functional connectives.

Talk outline

Conclusion

- Does grammatical form mislead as to logical form?
- The central case is quantifier phrases and proper nouns.
- Here, there is no good sense in which grammar misleads.
- The conflation is *logical*, not *grammatical*.
- And the slogan presupposes the existence of logically perfect languages.
- But even in TFL, this logicians' paradise is not so.