Intermediate Logic Spring
Lecture Four

Linguistic Ersatzism

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Linguistic Ersatzism

Re-Cap: Genuine Modal Realism

- According to Lewis' **genuine modal realism**, other possible worlds are just as real as the actual world
  - There are possible worlds which contain talking donkeys, and those possible talking donkeys are just as real and flesh-and-blood as the actual mute donkeys
- **Official Definition:** A possible world is a maximal spatiotemporal sum
- Lewis argues for genuine modal realism via a **cost-benefit analysis**
  - The commitment to real possible worlds is an *ontological cost* of the theory, but Lewis insists that that cost is offset by many many *benefits*

How to Reply to Lewis

(1) Argue that the whole idea of real possible worlds *is* incoherent, after all

- We looked at some arguments of this type in the last seminar

(2) Argue that genuine modal realism doesn't deliver all of the benefits it promises

- We briefly looked at one argument along these lines last week

(3) Argue that we can get all of the benefits that genuine modal realism offers *without* positing real possible worlds

- This is the strategy we will pursue this week

Introducing Ersatz Modal Realism

- In this lecture, we will be looking at **ersatz modal realism** (or *ersatzism* for short)
- According to ersatz realism, possible worlds do exist, but they are not the concrete, maximal spatiotemporal sums that Lewis believes in
- Instead, they are *ersatz worlds*, which do the work of Lewis' real possible worlds without the metaphysical extravagance
  - The adjective 'ersatz' means: made or used as a substitute, typically an inferior one, for something else: e.g. ersatz coffee

Three Varieties of Ersatzism

- Ersatzism comes in a number of different varieties
- Different varieties of ersatzism put forward different entities to serve as the ersatz worlds
- Lewis distinguishes between three different varieties in Chapter 3 of *On the Plurality of Worlds*
  - **Linguistic ersatzism**
  - **Pictorial ersatzism**
  - **Magical ersatzism**
- In this lecture, we will focus on just one variety: **linguistic ersatzism**

Linguistic Ersatzism

Possible Worlds are Stories

- **A natural thought:** Possible worlds are a kind of *story*
- Possible talking donkeys are not real, flesh-and-blood donkeys living in another real world

- When we say that there is a possible world in which donkeys talk, all we are saying is that there is a *story* according to which donkeys talk
- Talking donkeys are nothing but characters in fictional stories

Worlds as Sets of Sentences

- Possible worlds cannot be stories in quite the everyday sense
- In the everyday sense, stories don't exist until someone actually sits down and writes them out
- But we don't want the existence of a possible world in which donkeys talk to depend on whether anyone has ever actually written a story which stars a talking donkey
- Instead, we should think of possible worlds as **sets of sentences**
- Whether or not anyone has ever told a story about talking donkeys, there will certainly be a set containing the sentence 'There is a talking donkey'

Worlds as Consistent Sets of Sentences

- Not *every* **set of sentences** gets to count as a world
- Some sets of sentences are **inconsistent**, meaning that the sentences in that set could not all be true together

  {'There is a talking donkey', 'No donkey talks'}

- So, we should really think of possible worlds as **consistent sets of sentences**

An Incompleteness Problem

- Not *every* **consistent set of sentences** gets to count as a world
- Consider the following consistent set:

  {'There is a talking donkey'}

- This set can't really count as a possible world, because it is incomplete
  - It tells us hardly anything about what happens at that world
- To get a full-fledge possible world, we need to add details about **everything** which happens at that world

Worlds as Maximally Consistent Sets of Sentences

- Instead, possible worlds are **maximally consistent sets of sentences**
- A set, w, is maximally consistent iff it meets the following two conditions:
  - (i) w is consistent
  - (ii) For any set of sentences w', if w is a proper subset of w', then w' is inconsistent
- **Put more intuitively:**
  - w is maximally consistent iff w is consistent, and we could not add any more sentences to w without making it inconsistent
- In other words, possible worlds are sets of sentences which are as detailed as they consistently can be

Linguistic Ersatzism

- **Linguistic ersatzism** is the thesis that possible worlds are maximally consistent sets of sentences
- For linguistic ersatzism, the fundamental notion of truth **is not** relativised to a world
  - Fundamentally, sentences are true or false *full stop*, not true or false *relative to a world*
- Linguistic ersatzism defines **truth at a world** as follows:
  - Sentence s is *true at world* w iff the members of w jointly entail s
- Linguistic ersatizm defines **the actual world** as follows:
  - A maximally consistent set of sentences, w, is the *actual world* iff every member of w is true

Linguistic Ersatzism versus Genuine Modal Realism

- Compared to genuine modal realism, linguistic ersatzism appears to have a safe and sensible ontology
  - We all believe in sentences already, and mathematicians appeal to sets all of the time
  - So linguistic ersatzism builds its possible worlds out of things we already believed in
- Unfortunately, in Chapter 3 of *Plurality*, Lewis argues that linguistic ersatzism doesn't deliver as many benefits as genuine modal realism...

Linguistic Ersatzism

Analysing Modality

- Lewis claims that one of the great benefits of genuine modal realism is that it allows us to give a non-modal analysis of *possibility*
  - $\Diamond P$ iff there is some maximal spatiotemporal sum at which P
- As we saw last week, it's not *entirely* obvious that Lewis is right about this...
- But whether or not Lewis really gives us a non-modal analysis of *possibility*, he is keen to emphasise that linguistic ersatzism **definitely doesn't**

What does 'Consistent' Mean?

- **Linguistic Ersatzism:** possible worlds are maximally *consistent* sets of sentences

- **What does 'consistent' mean?**
  (1) A set of sentences is consistent iff all of the sentences in that set could be true together
  (2) A set of sentences is consistent iff there is some possible world at which all of the sentences in that set are true
  (3) A set of sentences is consistent iff there is some interpretation on which all of the sentences in that set are true
  (4) A set of sentences is consistent iff there is no proof of a contradiction from the sentences in that set

- None of these options will let a linguistic ersatzer give a non-modal analysis of *consistency*

Consistency as Modal

(1) **A set of sentences is consistent iff all of the sentences in that set could be true together**

- This is a *modal* definition of *consistency*
- If a linguistic ersatzer uses this modal definition of *consistency*, then they will have given a modal definition of what they mean by 'possible world'
- They can still define *possibility* in terms of worlds:
  - $\Diamond P$ iff 'P' is entailed by some maximally consistent set of sentences
- But crucially, this will not be an analysis of *possibility* in **non-modal** terms

Consistency as Truth at a World

(2) **A set of sentences is consistent iff there is some possible world at which all of the sentences in that set are true**

- This definition of consistency is **useless** for a linguistic ersatzer
- We are trying to think of possible worlds as maximally consistent sets of sentences, but then use talk of possible worlds to explain what we mean by 'consistent'
- That looks like a pretty vicious circle!

Consistency as Semantic

(3) **A set of sentences is consistent iff there is some interpretation on which all of the sentences in that set are true**

- On this definition, when we say that two sentences are consistent, we are saying that there is some way of **re-interpreting** them so that they are both true
  - '*a* is red' and '*a* is green' are consistent because we can interpret 'is red' to mean *is human* and 'is green' to mean *is an electrician*
- But when we ask whether there is a world in which something is both red and green, we don't want to know if there is some way of **re-interpreting** 'is red' and 'is green' to make '*a* is red' and '*a* is green' both true!

Consistency as Syntactic

(4) **A set of sentences is consistent iff there is no proof of a contradiction from the sentences in that set**

- The trouble with this definition is that it sets the bar for consistency too low (for the purposes of linguistic ersatzism)
- You cannot use the proof rules for FOL (or any other logic!) to derive a contradiction from this set:
  - {'*a* is red all over', '*a* is green all over'}
- Nonetheless, you might think it is impossible for something to be red all over and green all over

Adding Axioms?

- As Lewis acknowledges (*Plurality*, pp. 152–6), we could get around this problem by adding **axioms** to our logic
  - When we add axioms to the rules of FOL, we are allowed to appeal to them at any time in any proof
  - If we want to rule out worlds where something is red and green, just add as an axiom: *Nothing is red all over and green all over*
- The trouble is that we have no idea what axioms we should actually add
- We could get around this by simply stipulating that we should add an axiom just in case that axiom is **necessarily true**, but then we would have gone back to using modal concepts in our account of possible worlds

A Weaker World-Making Language?

- The problem with (4) only comes up because our language is rich enough to include **atomic sentences** that are **incompossible** (i.e. can't be true together)
- Maybe we could get around this problem by using a less rich **world-making language**?
- But if the world-making language is too poor, then the problem becomes explaining how sentences in the poor language can **entail** sentences in richer languages
- The old problems about consistency then re-appear as problems about entailment (see Lewis, *Plurality*, pp.151–2)

No Non-Modal Analysis of Possibility

- **Four Definitions of 'Consistent'**

  (1) A set of sentences is consistent iff all of the sentences in that set could be true together

  (2) A set of sentences is consistent iff there is some possible world at which all of the sentences in that set are true

  (3) A set of sentences is consistent iff there is some interpretation on which all of the sentences in that set are true

  (4) A set of sentences is consistent iff there is no proof of a contradiction from the sentences in that set

- If the linguistic ersatzer chooses (1), then she will be using modal concepts in her analysis of *possibility*

No Non-Modal Analysis of Possibility

- **Four Definitions of 'Consistent'**

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  (4) A set of sentences is consistent iff there is no proof of a contradiction from the sentences in that set

- The linguistic ersatzer cannot choose (2) or (3) — they are inappropriate for her purposes

No Non-Modal Analysis of Possibility

- **Four Definitions of 'Consistent'**

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  (3) A set of sentences is consistent iff there is some interpretation on which all of the sentences in that set are true

  (4) A set of sentences is consistent iff there is no proof of a contradiction from the sentences in that set

- If the linguistic ersatzer chooses (4), then she will need to add all sorts of axioms, and we don't know how to specify which ones to add non-modally

Linguistic Ersatzism

What is the World-Making Language?

- For the linguistic ersatzer, possible worlds are maximally consistent sets of sentences
- **But sentences of which language!?**
- It won't do to use plain old English: there are lots of individuals we don't have names for in English, and lots of properties we don't have predicates for
  - English as it was 300 years ago didn't have the means to express the property of *being a smartphone*
  - It seems a safe bet that in 300 years time, people will look back on our language and say that there were certain properties we couldn't express!

A Lagadonian Language

- It is clear that we will need to use a different kind of language to build the linguistic ersatzer's worlds
- Lewis (*Plurality*, pp. 145–6) suggests that we use a **Lagadonian** language
- In a Lagadonian language, we use each individual *as a name for itself*, and each property *as a predicate expressing itself*

A Lagadonian Language

- The name comes from Jonathan Swift's *Gulliver's Travels*

- Gulliver meets some linguists in a city called Lagado, who are experimenting with a language in which everything is a name for itself
- This language has its advantages — it is universal — but it is also impractical
- People have to carry around huge sacks filled with everything they want to talk about, so they can pull them out in conversation when needed!

A Set-Theoretic Lagadonian Language

- Lewis' version of a Lagadonian uses set-theory to eliminate the need to actually carry around the objects you want to talk about
- An (atomic) Lagadonian sentence is an **ordered sequence** of a property or relation, followed by the appropriate number of individuals
  - An **ordered sequence** is a lot like a set, except we keep track of the order of the members of a sequence
  - $\{\text{Frege, Wittgenstein}\} = \{\text{Wittgenstein, Frege}\}$, because these sets have exactly the same members: Frege and Wittgenstein
  - $\langle \text{Frege, Wittgenstein} \rangle \neq \langle \text{Wittgenstein, Frege} \rangle$, because although these sequences have the same members, they have them in different orders
  - $\langle a_1, \ldots, a_n \rangle = \langle b_1, \ldots, b_n \rangle \leftrightarrow (a_1 = b_1 \wedge \ldots \wedge a_n = b_n)$

A Set-Theoretic Lagadonian Language

- **Here is an example of a Lagadonian sentence:**
  - ⟨The property of *being human*, Socrates⟩
- This Lagadonian sentence is the ordered sequence of a property, followed by an individual; it says that Socrates is human
- **Here is another example:**
  - ⟨The relation of *loving*, Antony, Cleopatra⟩
- This Lagadonian sentence is the ordered sequence of a two-place relation, followed by two individuals; it says that Antony loves Cleopatra

Linguistic Ersatzism

Alien Properties

- We can use a Lagadonian language to construct a wealth of ersatz possible worlds
- **But there is a limit!**
- We can refer to any individual and any property in the *actual world*
- But couldn't there be **alien properties**, properties which are not actually instantiated, and which cannot be constructed out of properties which are instantiated?
- It is not at all clear how a linguistic ersatzer could accommodate the possibility of alien properties

Alien Properties and Genuine Modal Realism

- Alien properties posed a problem for Lewis' attempt to use a **Recombination Principle** to generate all the real possible worlds he needs
- But importantly, Lewis *can* accommodate alien properties, so long as he is willing to use a modal principle in his account of what worlds there are, rather than Recombination
- Lewis (*Plurality* pp. 158–65) uses the fact that his theory can accommodate alien properties and linguistic ersatzism doesn't seem to be able to as an argument for his theory

Two Strategies for Dealing with Alien Properties

- There are two ways that a linguistic ersatzer could deal with the problem of alien properties

(1) They could try to find some way of accounting for the possibility of alien properties within their theory

(2) They might simply *deny* that alien properties are really possible

Don't Name, Describe!

- We can't **name** alien properties in a Lagadonian language, but we could still **describe** them
- Suppose you thought there could be a world where every atomic particle had some alien property
- You could put the following sentence into one of your maximally consistent sets of sentences:
  - There is some property, p such that every fundamental particle instantiates p, and p cannot be built out of . . .

    (you fill in the dots with a long list of all the fundamental properties in the actual world)

Conflating Distinct Possibilities

- Lewis considers this option in Chapter 3 of *Plurality*, but rejects it because he thinks it *conflates* distinct possibilities
- Imagine that w_1 and w_2 are exactly the same, except the fundamental particles in w_1 have one alien property, and the fundamental particles in w_2 have a *different* alien property
- There's no way for a linguistic ersatzer to distinguish these worlds
  - As far as the alien properties go, they both just say: 'There is some property, p such that every fundamental particle instantiates p, and p cannot be built out of . . .'

Two Possible Replies

(1) Find a way for the linguistic ersatzer to distinguish between worlds like w_1 and w_2

- Melia pursues this strategy in his *Modality*, pp. 160–72

(2) Deny that the linguistic ersatzer needs to admit any distinction between w_1 and w_2

- But if you are going to pursue this strategy, maybe you would be better off just denying that the lingusitic ersatzer needs to admit the possibility of alien properties...

Why Accept that Alien Properties are Possible?

- Imagine a world, w, in which there was no electromagnetic force
- From the point of view of w, *negative charge* is alien

- But if our world has properties that are alien to w, why shouldn't another world have properties which are alien to us?
- Why think that our world is so special that there couldn't be any properties alien to us?

Denying the Possibility of Alien Properties

- This looks like a good argument *if you are a genuine modal realist*
  - According to genuine modal realism, there is nothing metaphysically special about the actual world
- But for the linguistic ersatzer, the actual world is **metaphysically priviliged**
  - The actual world is the only maximally consistent set of sentences which only contains **true** sentences
- It may be, then, that the linguistic ersatzer could coherently deny that there could be properties which are not reducible to the properties instantiated at the actual world
- That is something I will leave you to think about!

Seminar 4

- The reading for Seminar 4 is:
  - David Lewis, *On the Plurality of Worlds*, ch.3
- Access to this chapter is available via the Reading List on the VLE
- A number of study questions have been posted on the VLE; why not meet up and discuss them in groups?

Lecture and Seminar 5

- Next week, we will start looking at **Second-Order Logic**
- Please make sure that you read the *Second-Order Logic Primer*, available on the VLE