Conditionals Lecture 1

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Varieties of Conditional

- The basic case: take a sentence in the indicative mood, suitable for making a statement: 'We'll be home by ten'; 'Tom cooked the dinner'. Add a conditional clause:
- 'We'll be home by ten if the train is on time'
- 'If Mary didn't cook the dinner, Tom cooked it'.
- These are called indicative conditionals, or sometimes 'open conditionals'.

Overview of 4 lectures

- 1. When is a conditional true?
- 2. When is a conditional probable?
- 3. Counterfactual/subjunctive conditionals
- 4. Embedded conditionals, uncertainty and indeterminacy

First contrast

- 'Subjunctive' or 'counterfactual' conditionals.
- Tom would have cooked the dinner if Mary had not done so.
- We would have been home by ten if the train had been on time.
- Argument for big difference:
- If Oswald didn't kill Kennedy someone else did
- If Oswald hadn't killed Kennedy someone else would have

Argument against big difference

- 'Don't go in there: if you go in you will get hurt'
- Ceiling collapses.
- 'You see, if you had gone in you would have got hurt. I told you so'
- Similarly for the earlier examples, and countless others.

Second contrast

- As well as conditional statements, there are conditional commands, promises, offers, questions, etc. As well as conditional beliefs there are conditional desires, hopes, fears, etc. For instance I can have the desire that if I'm offered the job, no one be told immediately. It turns out to be quite a stiff test: which theory of conditional statements /beliefs extends to a good theory of these other conditional speech acts/mental attitudes

Conditionals and Reasoning

- 1. Deductive reasoning. Much controversy over which principles of deductive reasoning using conditionals are valid. E.g. transitivity: 'If A, B; and if B, C; so, if A, C'. Putative counterexample:
- If Smith is elected, Brown will resign immediately afterwards.
- If Brown dies before the election, Smith will be elected.
- So, if Brown dies before the election, Brown will resign immediately afterwards.

Non-demonstrative reasoning

- They are not at home; because the lights are off; and if they had been at home the lights would have been on.
- I think the patient took arsenic; for he has [such-and-such] symptoms; and these are the symptoms he would have if he had taken arsenic.

Practical reasoning

- If I do x, such-and such will happen.
- Care is needed about which conditionals provide reasons for acting. Tom has heart disease. He is taking medication to lower the chance of a heart attack. Yet from another perspective: if he's taking this medication he's more likely to get a heart attack than if he isn't.

Truth conditions

- A dominant tradition in the philosophy of language is to explain meaning in terms of truth conditions. We have devices for building a complex sentence out of one or more simpler sentences. One-place sentence operators include: it is not the case that/possible that/probable that/surprising that/known that.

Two-place sentence operators

- Let A be 'Ann went to Paris'. Let B be 'Bob went to Paris. We can form sentences
- A and B; A or B; if A, B; A before B; A because B; if it had been the case that A, it would have been the case that B.

According to the dominant tradition, we need to explain how the truth-conditions of the whole depend in a systematic way of the truth conditions of the contained sentences.

Truth-functionality

Ground-level logic deals with the operators which have the peculiarly simple property that the truth value(s) of the contained sentence(s) determine the truth value of the resultant sentence: not; or; and; ?if?—this last being controversial. Write these as $\neg A$, $A \vee B$, $A \& B$, $A \supset B$.

Truth table for 'If A,B'

	A	B	A⊃B	¬A⊃B	A⊃¬B
1.	T	T	T	T	F
2.	T	F	F	T	T
3.	F	T	T	T	T
4.	F	F	T	F	T

- A⊃B = ¬A or B = ¬(A&¬B)
- ¬(A&B) = A⊃¬B
- A or B = ¬A⊃B

Non-truth-functional truth conditions

	A	B	A⊃B	A→B
1.	T	T	T	T [? T or F]
2.	T	F	F	F [?? T or F]
3.	F	T	T	T or F
4.	F	F	T	T or F

- NB this is not a theory, but the upshot of some theory about what makes a conditional true, which is non-truth-functional

Example: Stalnaker

- 'Consider a possible world in which A is true and otherwise differs minimally [if at all] from the actual world. 'If A, B' is true (false) if B is true (false) in that possible world.
- i.e 6 possibilities, not 4 or 8, for Stalnaker. (See previous slide)

Arguments for truth-functionality

- 1. The inferences from (A or B) to (if not A, B), and from not(A&B) to (if A, not B) can seem very compelling. They are valid truth-functionally, but invalid non-truth-functionally
- 2. Conditional proof: from premises X, Y it follows that Z. So, from premise X it follows that if Y, Z. Now from premises ¬(A&B), A it follows that B. So, from premise ¬(A&B) it follows that if A, B. Valid only on the truth-functional reading.

Minimal non-truth-functionality

A	B	A→B	¬A→B	A→¬B
T	T	T	T/F	F
T	F	F	T/F	T
F	T	T/F	T	T/F
F	F	T/F	F	T/F

Arguments against truth-functionality

1. Notoriously, all conditionals with false antecedents are true! And all conditionals with true consequents are true. But I am surely not inconsistent when I believe the Republicans won't win, but reject the claim that if they win they will double income tax. And I can consistently believe that Sue is lecturing just now, while rejecting the thought that if she had a heart attack today, she is lecturing just now.

Other absurdities

- A 'proof' of the existence of God:
- If God does not exist, then it is not the case that if I pray my prayers will be answered.
- I do not pray.
- Therefore God exists.

Switches Paradox

- If (A&B) then C; therefore, either (if A then C) or (if B then C)
- If you press switch A and you press switch B, the light will go on. Therefore, either, if you press A the light will go on, or, if you press B the light will go on.
- If it's a triangle and its equi-angular, then it's equilateral. Therefore, either, if it's a triangle it's equilateral, or, if it's equi-angular it's equilateral.
- Valid for the truth-functional conditional.

More absurdities

- The following are tautologies:

- (If A, B) or (If B, A)
- (If A, B) or (if B, C)
- (If A, B) or (If not A, B)

Grice's pragmatic defence

There are many ways of speaking the truth yet misleading your audience. One way is to say something weaker than some other relevant thing you are in a position to say. That's why we don't *say* 'If A, B' when we just believe ¬A; or when we just believe B. The same phenomenon applies to disjunctions, and negated conjunctions:

He's either in the pub of the library

You won't eat those and live

But

- Unlike the case of disjunctions and conjunctions, nobody thinks that believing ¬A is sufficient reason to *believe* 'if A, B', or that they are doing anything wrong if they reject A and also reject if A, B.

- Also Grice's suggestion doesn't address the full range of counterintuitive results.