Motivation

Reported connection between conditionality/conditionals and modality.

• “[A] conditional never involves factuality, or more accurately [...] it never expresses the factuality of either of its constituent propositions” (Comrie, 1986: 89).

• “The presence of if in the construction marks the assumption in its scope as unassertable. As a result, the assumption in the apodosis [...] is not treated as asserted either” (Dancygier, 1998: 72).

• “If P (then) Q is a weaker statement that Q on its own” (Huddleston & Pullum, 2002: 741).

• “Conditionals are not part of fact-stating discourse: conditionals, instead, express uncertainties” (Turner, 2003: 135).

• “Modality seems [...] to be doubly marked in conditionals” (Palmer, 1986: 189).

• “Conditionals have an intimate link with the domain of epistemic qualification” (Nuyts, 2001: 352).

• “The conditional construction is conducive to the expression of modality” (Huddleston & Pullum, 2002: 744).
A corpus-based approach

Counting instances of modal marking (modalisations) in corpus samples.

Corpus: written BNC

Samples (approx. 1000 s-units each)

- Conditionals: *if, assuming, in case, on condition, provided, supposing, unless.*
- Concessive conditionals with *even if* and *whether*
- Indirect interrogatives with *if* and *whether*
- Non-conditional constructions with *when* and *whenever.*
# Modal Density

<table>
<thead>
<tr>
<th>Definition</th>
<th>Average number of modal markings per clause.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expression</td>
<td>Number of modal markings per 100 clauses (%)</td>
</tr>
<tr>
<td>Utility</td>
<td>Helps comparisons between samples by normalising for the complexity of the constructions in each.</td>
</tr>
</tbody>
</table>

(Gabrielatos, 2010)

**Lexical Density:**
- The average number of content words per clause (Halliday, 2004: 654-655).
- The percentage of the tokens in a text that are content words (Ure, 1971).
Modal density may not be enough

- A high MD may be the result of a number of heavily modalised constructions in the sample.
  - If you live in the Wallingford area and have a railway interest perhaps you might like to join this enthusiastic group and give them a few hours of your time. [CJ7 109]

⇔ In such a case, a sample might show a high MD (relative to another sample) despite a large proportion of constructions in it being modally unmarked.
## Modalisation Spread

<table>
<thead>
<tr>
<th>Definition</th>
<th>Proportion of constructions that carry at least one modal marking.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expression</td>
<td>Proportion (%) of modalised constructions.</td>
</tr>
<tr>
<td>Utility</td>
<td>Corrects for heavily modalised constructions in the sample.</td>
</tr>
</tbody>
</table>

*(Gabrielatos, 2010)*

**Spread:**

- The proportion of corpus speakers who use a particular language item *(Gabrielatos & Torgersen, 2009; Gabrielatos et al., 2010).*
Modal Load
The interaction of MD and MS
Modalisation by subordinator (e.g. *if*) not included in the counts.
Modal nature of *if*-conditionals (1)

The high modal load of *if*-conditionals does not, in itself, define their relationship to modality.

→ Are they simply modalised?
→ Are they themselves modal?
→ ???
Modal nature of *if*-conditionals (2)

Modalised?

The protasis modalises the apodosis ...

• ... but this modalisation is *internal* to the construction.

The conditional can be *externally* modalised itself.

  – **Perhaps** if it's a bad case the patient has to wear a special boot or keep the leg held straight with iron braces. [CHG 80]

• However ...

• ... this kind of modalisation is not included in MD, ...

• ... nor is this observation surprising or interesting.

Modal?

No -- they do not modalise other constructions.
Modal nature of *if*-conditionals (3)

They are modally dense ...
... regardless of external modalisation,
... but without functioning as modals

"[I]f is not truly neutral in stance, but is indeterminate between a range of stances including almost everything except complete positive stance towards P or ~P [true or not true]"

(Dancygier & Sweetser, 2005: 53 – my emphasis)

The stance expressed in the protasis “may be merely one of negative expectation or assumption, the positive not being ruled out completely”.

Quirk at al. (1985: 1010)
Given the inherent indeterminacy of conditionals, our understanding of their modal nature can be enhanced by drawing parallels with quantum states* - famously exemplified by Erwin Schrödinger‘s thought experiment.

* “A quantum state is constituted not only by a specification of the truth or falsity of some of the eventualities, but also by the specification of the probabilities of finding truth or falsity upon actualisation of all the other eventualities. Thus a quantum state is a network of potentialities.” (Shimony, 1992: 374)
In natural language use, indeterminacy is not uncommon:

• AUTHORSHIP can be called, if anything or anyone can, dual, equivocal. The works of authors are replicas, and they are unique. They are and are not autobiographical. An author is and is not his book. [A05 1196-1199]
Schrödinger’s thought experiment

It sought to demonstrate the absurdity of applying quantum principles to objects or systems above the atomic level.

• “A cat is penned up in a steel chamber, along with the following device (which must be secured against direct interference by the cat): in a Geiger counter there is a tiny bit of radioactive substance, so small, that perhaps in the course of the hour one of the atoms decays, but also, with equal probability, perhaps none; if it happens, the counter tube discharges and through a relay releases a hammer which shatters a small flask of hydrocyanic acid. If one has left this entire system to itself for an hour, one would say that the cat still lives if meanwhile no atom has decayed. [...] It is typical of these cases that an indeterminacy originally restricted to the atomic domain becomes transformed into macroscopic indeterminacy, which can then be resolved by direct observation.”

(Schrödinger, 1935; transl. Trimmer, 1980: 327)
Conditional constructions are “bipartite” while “defining a single situation” (Fillmore, 1986: 164, 171)

Protasis (P)
• The part containing the condition
  (the *if* part / the subordinate part)

Apodosis (A)
• The part containing the proposition that is contingent on the condition
  (the *then* part / the matrix part)
Conditionals as S-cat boxes

Observation possible for P and A separately

Probability not only 50/50, but covering whole spectrum

Gap large enough for poison to reach the cat, but too small for cat to tamper with mechanism
Using the S-cat box

• The factuality/actuality of P and A is ‘in limbo’ pending comparison with reality, or, more accurately, with the listener‘s/reader‘s contextually relevant knowledge, inferences, assumptions, interpretations, wishes, intentions etc.

• The interpretation of different types of conditionals hinge on observing the P or A compartment.

• The observation of P or A compartments, and the establishment of facts is not always necessary - or may not even be intended by the speaker.

• Sometimes, positing a polar alternative may not be warranted.
Indeterminacy: Binary approach

When interpreting *if*-conditions “hearers are [...] prompted to construct not one single space involving $P$ and $Q$, but also an alternative space involving $\sim P$ and $\sim Q$.”


Intuitively plausible, but indeterminacy need not be binary...
Pernier was desperate to impress his colleagues with a find of his own, according to Dr Eisenberg, and needed to unearth something that could outdo the discoveries made by Sir Arthur Evans, the renowned English archaeologist, and Federico Halbherr, a fellow Italian. He believes that Pernier's solution was to create a “relic” with an untranslatable pictographic text.

If it was a ruse, it worked.

Evans was so excited that he published an analysis of Pernier's findings. [*Times Online*]

The binary approach does not work here.

⇒ If P is not the case, A becomes irrelevant.

The conditional functions as an indeterminate (i.e. modalised/tentative/hedged) version of:

• ‘It was a ruse that worked’.
  – e.g. ‘It might have been a ruse that worked.’
Fundamental typological distinction
(Quirk et al., 1985: 1088-1097, Gabrielatos, 2010: 236-264)

**Direct conditionals (DIR)**
The realisation, activation, actuality or factuality of the content of A depends on the realisation, activation, actuality or factuality of the content of P.

- If physicists had tried to discover a way to release nuclear energy before 1939, they would have worked on anything else rather than the field which finally led to the discovery of fission, namely radiochemistry. [B78 1973]

**Indirect conditionals (IND)**
What is contingent on P is not the content of A, but the relevance of its very uttering, or the wording of its content, or the accurate indication of (aspects of) the referent.

- He's not a bad sort, for a brother if you know what I mean. [AN7 3257]
Indirect conditionals
Observation in P:

☑ have the stomach \( \rightarrow \) wonderful fly food
☒ have the stomach \( \rightarrow \) wonderful fly food

• P and A not connected by causality
• What ☑P activates is the relevance of the information (indirect suggestion) in A.

\( \Rightarrow \) **Relevance IND conditional**
PHOTOGRAPHY NOW is planned then, as a diagram and a series of oppositions, or varieties.

If diagram is the right word, we hope that it is like a set of arrows, or avenues, pointing outwards in some of the many directions an artist interested in photography might explore. [EV8 151]

Observation in P:

☑ Right word → we hope it is like a set of arrows
☒ Right word → we hope it is like a set of arrows

• P and A not connected by causality
• What ☑P activates is the contextual accuracy of the word ‘diagram’ in P, in light of which A can be interpreted.

⇒ Comment IND conditional
Inferential conditionals
Observation of the factuality of A provides clues for drawing inferences regarding the status of P.

Clues to the non-factuality of A provided by modal marking (‘d) in combination with Perfect infinitive.
As he spoke, Deems rose, clutching the MPRP weapon. ‘I prefer my cynicism to your self-deceiving optimism.’ ‘Ibrox, my party wishes merely to see an end to conflict. We desire to finish with galactic war for ever. Is that self-deceiving?’

| It is nothing | if not self-deceiving. [HA0 3580] |

- On the surface, it is presented as an inference.
- Observation in A → proposition is absurd → inference (= it is self-deceiving).

⇒ Rhetorical conditional
Observation not needed / intended
## Going Back to Work

Now that you've thought long and hard about goals and objectives, let's get back to the nitty-gritty of finding and getting a job.

<table>
<thead>
<tr>
<th>If you are going to work for somebody else,</th>
<th>then you'll need to prepare a record of your abilities and experience.</th>
</tr>
</thead>
</table>

Surface (traditional) interpretation:

- Reader’s intention regarding working for somebody else unresolved.
- Also unresolved whether she will need to prepare such a record.
- Resolution of A depends on resolution of P.

### However:

- Section heading: ‘Going back to work’ -- Next section heading: ‘What can you do that's of interest to an employer?’
- No advice on becoming self-employed is given.

⇒ The co-text indicates that the section is targeted at people seeking employment (rather than self-employment).
⇒ Nothing unresolved with P from the very beginning!
⇒ **Author uses the conditional construction to tentatively (politely) give information or advice.**
But the shadows that were deepening over Europe were reaching out to "change everything" in lives across the world, and the Burrows family were to be no exception. The house they lived in belonged to a German lady, a Miss Wacker, who had been home in her own country when war broke out and was unable to return. The night war was declared Mrs Burrows broke down in tears. Joyce tried to comfort her, assuring her that none of the boys would have to go. Of course they did. They even put their ages forward by a year, unknown to their parents, when they enlisted. Beverley became a major in an armoured tank division, Walter served with distinction and held officer rank in both the air force and the infantry, Robert Bramwell had a commission in the anti-tank corps. Both he and Walter saw service in New Guinea, suffered extreme malaria attacks and were wounded and hospitalised. The fourth and youngest boy, Bramwell Orams, was in the air force from the age of seventeen and flew on many sorties in the Pacific war zone.

| If the sisters' husbands are included | there were seven men from the family in action, some in the thickest part of the New Guinea campaign. [H7E 383] |

- Surface interpretation: Up to seven men
  - Actual number depending on observation in P.
- Interpretation supported by co-text: A lot of men - expressed in a modalised (i.e. tentative) way.
- Observation in P not needed/intended.
Conditionals as linguistic quantum bits

**Classical bit**
- No measurement → either of two states: 0 or 1.
- Measurement → either of two states: 0 or 1

**Quantum bit (qubit / Q-bit)**
- No measurement → any state between 0 and 1 (inclusive)
- Measurement → either of two states: 0 or 1
  - but with attached probabilities for each


- The utility of conditionals lies in their leaving the issue of actuality unresolved.
- Expressed from the perspective of modality, conditionals are constructions which modalise what is communicated through them.
Thank you*

For details, see Gabrielatos (2010: 296-316)

* No cats were harmed in the making of this presentation
References (2)


