# Just in case

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# Introduction

Biscuit conditionals convey that the consequent is true regardless of the truth of the antecedent:

- (1) a. There are biscuits on the sideboard if you want them. Austin (1956)
  - $b.\approx$  There are biscuits on the sideboard and I mention them in case you're hungry.

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  - b. ≈There are biscuits on the sideboard and I mention them in case you're hungry.

#### Hypothetical conditionals lack this property:

- (2) a. There are biscuits on the sideboard if Jane went to the bakery.
  - **b.**  $\approx$  There might be biscuits on the sideboard, but only if Jane went shopping.

English *if*-conditionals are ambiguous between biscuit and hypothetical readings.

There has been a lot of cross-linguistic work on morphosyntactic cues for biscuithood: (see Bhatt and Pancheva (2006) for an overview)

- \* *if*-biscuits are incompatible with *then*;
- \* in V2-languages, the V2 order blocks a biscuit reading.

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In our talk, we contribute to this literature by presenting a clear case of morphologically marked biscuithood: *in case* conditionals (ICCs) are always biscuit conditionals.

- (3) a. In case you're thirsty, there's beer in the fridge.
  - $b. \ \ \# \ In \ case \ John \ remembered \ to \ go \ to \ the \ liquor \ store, there's \ beer \ in \ the \ fridge.$

# The plan

- 1. The empirical landscape:
  - \* in case conditionals are always biscuits;
  - \* in case conditionals are never factual.
- 2. Proposal:
  - \* intuitive overview;
  - \* an attentional dynamic semantics;
  - \* two illustrations.
- 3. Further predictions:
  - \* the *in case-might* connection.

# The empirical landscape

#### Two facts about in case conditionals

In this section, we will carve out the empirical profile of ICCs. We will make two claims:

- \* ICCs are always biscuits;
- \* ICCs are incompatible with scenarios that license factual conditionals.

# In case conditionals are always biscuits

We provide four tests to support the view that ICCs are always biscuits:

- \* Test 1: consequent entailment
- \* Test 2: combining with *only*
- \* Test 3: embedding under indirect reports
- \* Test 4: restricting quantifiers

Like assertoric biscuit conditionals, assertoric ICCs entail their consequents:

- (4) a. In case you're thirsty, there's beer in the fridge.
  - $\Rightarrow$  There's beer in the fridge.
  - b. If you're thirsty, there's beer in the fridge.
    - $\Rightarrow$  There's beer in the fridge.

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- (5) Unconditionals (Rawlins, 2013)
  - Whether Mary or Beth come to the party, the party will be fun.
  - $\Rightarrow$  The party will be fun.
- (6) Concessive conditionals (Bennett, 1982)
  - Even if Mary comes to the party, the party will be fun.
  - $\Rightarrow$  The party will be fun.

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However, ICCs are morphosyntactically distinct from unconditionals and, unlike concessive conditionals, ICCs are incompatible with *even*:

- (7) a. Even if John does a good job, he will be fired at the end of the year.
  - b. (\*Even) in case you're hungry, there are biscuits in the cupboard.

# Test 2: combining with only

*If*-biscuits are incompatible with *only* (Geis and Lycan, 1993). So are ICCs.

- (8) a. There are biscuits on the sideboard **only** if you want them.
  - b. \*There are biscuits on the sideboard **only** in case you want them.

The only reading available for (8a) is a hypothetical reading, represented in figure 1. Since this reading is unavailable for (8b), the sentence is bad.



Figure 1: Magical biscuits

# **Test 3: embedding under indirect reports**

*If*-biscuits and ICCs cannot embed under indirect reports, unless it is a report of a speech act (Bhatt and Pancheva, 2006; latridou, 1991).

- (9) If biscuits (latridou, 1991, ex. 17)
  - a. John said that if you are thirsty there is beer in the fridge.
  - b. John believes that if you are thirsty there is beer in the fridge.

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- (10) ICCs
  - a. John said that in case you are thirsty there is beer in the fridge.
  - b. \*John believes that in case you are thirsty there is beer in the fridge.

# **Test 4: restricting quantifiers**

*In case*-clauses cannot serve as the restrictors of quantificational adverbs, which is a distinctive feature of biscuit conditionals. (Bhatt and Pancheva, 2006)

- (11) a. If a student fails the exam, he usually tries again.
  - b. \*In case a student fails the exam, he usually tries again.

(Moltmann, 2019)

#### A caveat

So far, we have focused on cases in which ICCs are synonymous with *if*-biscuit conditionals. As pointed out by an anonymous reviewer and Karl Mulligan, there are sentences that break this analogy.

They normally involve a future-oriented antecedent:

- (12) a. #I'll bring an umbrella if it rains.
  - b. I'll bring an umbrella in case it rains.

We leave this as an open issue, but we are happy to go back to these cases during the Q&A!

In case conditionals are never factual

#### In case conditionals are never factual

Although very similar, *if*-biscuits and ICCs are distinct in one way: ICCs are infelicitous in the contexts that license factual conditionals.

Factual conditionals are conditionals that require that the content of the *if*-clause be brought up in the preceding discourse. (latridou, 1991)

(13) A: I'm traveling to Europe soon!B: If you're traveling to Europe, can you bring me a souvenir?

#### In case conditionals are never factual

If biscuits are compatible with factual readings:

(14) A: I'm feeling really thirsty.

B: If you're so thirsty, there's some lemonade in the fridge.

#### But ICCs are not:

(15) A: I'm feeling really thirsty.

B: #In case you're so thirsty, there's some lemonade in the fridge.

# **Summary**

A theory of ICCs should capture the two following generalizations:

- \* ICCs are always biscuits;
- \* ICCs are infelicitous if the content of their antecedents has been brought up in the previous discourse.

# Proposal

# **Intuitive overview**

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- \* attentional: ICCs highlight worlds where their antecedent is true. We capture this using tools from inquisitive semantics. (Ciardelli et al., 2018)
- \* dynamic: ICCs are not factual, because they have a Veltman (1996)-style test semantics whereby they can be asserted only if the antecedent is not entailed by the context set.

# An attentional dynamic semantics

#### Crucial definitions:

- \* An information state s is a set of worlds  $(s \in \mathcal{P}(W))$ .
- \* An information state s supports  $\phi$  ( $s \models \phi$ ) iff  $\forall w \in s : \llbracket \phi \rrbracket^w = 1$ .
- \* A context  $c \in \mathcal{P}(\mathcal{P}(W))$  is a set of information states.
- \* A context change potential (CCP)  $\cdot [\cdot] : \mathcal{C} \times \mathcal{L} \to \mathcal{C}$  is a function from context-expression pairs to contexts.

# An attentional dynamic semantics

We update c with 'in case p, q' via the following algorithm:

- \* first, we check whether the context already entails p, if it does, the context crashes;
- \* if it doesn't, then we return the set of information states that support either  $p \wedge q$  or q.

(16) 
$$c[\text{in case } p, q] = \begin{cases} \{|p \wedge q|, |q|\} & c[p] \neq c \\ \emptyset & \text{otherwise} \end{cases}$$

# An attentional dynamic semantics



**Figure 2:** Updating with 'in case p, q'

- \*  $\phi$  is informative iff  $|\phi| \neq W$
- \*  $\phi$  is inquisitive iff  $[\![\phi]\!]$  contains at least two maximal possibilities
- \*  $\phi$  is attentive iff  $[\![\phi]\!]$  contains a non-maximal possibility.

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- $\star \phi$  is an assertion iff it is neither inquisitive nor attentive;
- \*  $\phi$  is a question iff it is neither informative nor attentive;
- \*  $\phi$  is a conjecture iff it is neither informative nor inquisitive.

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- st  $\phi$  is a conjecture iff it is neither informative nor inquisitive.

When a speaker utters 'in case p, q,' they conjecture that p and assert that q.

Perhaps it is worth emphasizing that *every* sentence draws attention to certain possibilities, not only attentive sentences. What is special about attentive sentences is that they draw attention to possibilities that do not contribute to representing their informative or inquisitive content. Attentive sentences do something more than providing or requesting information (if they provide or request any information at all).

(Ciardelli et al., 2009, p. 100)

# The dynamic part

(17) The felicitous case:

In case you're hungry, there are some biscuits on the sideboard.

- 1. We check if the context entails that the addressee is hungry;
  - \* since that wasn't brought up in the preceding discourse, it doesn't.
- 2. we then return a set of sets of worlds where:
  - \* you're are hungry & there are biscuits on the sideboard;
  - \* there are biscuits on the sideboard.

# The dynamic part

### (18) The infelicitous case:

A: I'm so hungry!

B: #In case you're so hungry, there are some biscuits on the sideboard.

- 1. We check if the context entails that the addressee is hungry;
  - \* it does.
- 2. the context crashes.

**Further predictions** 

In our semantics, *in case*-clauses function much like the modal *might* functions in the attentional semantics of Ciardelli et al. (2009).

Ciardelli et al. define  $\lozenge p$  as  $\top \lor p$  where  $\lor i$  is inquisitive disjunction.

(19) 
$$\llbracket \phi \vee \psi \rrbracket = \{ s : s \models \phi \text{ or } s \models \psi \}$$



Figure 3: inquisitive *might* à la Ciardelli et al.

According to our semantics, if we ignore the semantic contribution of the test condition, then 'in case p, q' is equivalent to  $(\top \lor p) \land q \equiv \Diamond p \land q$ .

This strikes us as a welcome prediction, because ICCs can often be paraphrased as *since*-clauses that contain an epistemic possibility modal: (h/t to Omar Agha)

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This strikes us as a welcome prediction, because ICCs can often be paraphrased as *since*-clauses that contain an epistemic possibility modal: (h/t to Omar Agha)

(20) a. In case you're thirsty, there's beer in the fridge. b.  $\approx$  Since you might be thirsty, there's beer in the fridge.

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Moreover, like ICCs, *since+might-*clauses are also infelicitous when their prejacent is already entailed by the common ground (21).

(21) a. A: I'm feeling a bit thirsty.

B: #Since you might be thirsty, there's some lemonade in the fridge.

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(21) a. A: I'm feeling a bit thirsty.

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In contrast, ordinary *since*-clauses pattern with the *if*-clauses of ordinary biscuit conditionals and remain felicitous when entailed by the common ground:

(22) a. A: I'm feeling a bit thirsty.

B: Since you're thirsty, there's some lemonade in the fridge.

This, we believe, supports our hypothesis that ordinary biscuit conditionals closely resemble *in case*-conditionals, but lack the highlighting effect of ICCs.

**Conclusion** 

### Conclusion

In this talk, we provided a semantic account of in case conditionals (ICCs).

\* ICCs highlight the worlds where their antecedent is true.

(the attentional component)

\* ICCs have a test semantics: they can only be asserted if their antecedent is not entailed by the context set.
(the dynamic component)

ICCs provide us with an example of morphologically-marked biscuithood, and hence promise to be a fruitful testing ground for theories of biscuit conditionals.

# Thank you!

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Extra slides

# Comparison between types of conditionals

	biscuit	in case	factual
consequent entailment	✓	✓	✓
compatibility with then	×	×	✓
compatibility with only	×	×	×
embeddability under say	✓	✓	✓
embeddability under believe	Х	×	✓

Table 1: Differences between biscuit, in case, and factual conditionals

# More relevant examples

### (23) Compatibility with then:

- a. #If you're hungry, then there are biscuits on the sideboard. (if biscuit)
- b. \*In case you're hungry, then there are biscuits on the sideboard. (ICC)
- c. A: I hate my boss... (factual)

B: If you hate your boss, then you should leave your job.

### (24) Compatibility with *only*:

a. #Only if you're hungry, there are biscuits on the sideboard.

(if biscuit)

- b. \*Only in case you're hungry, there are biscuits on the sideboard. (ICC)
- c. A: I hate my boss... (factual)

B: #Only if you hate your boss so much, you should leave your job.

# More relevant examples

### (25) Embeddability under say:

a. John said that if you're hungry, there are biscuits on the sideboard.

(if biscuit)

b. John said that in case you're hungry, there are biscuits on the sideboard.  $(ICC) \label{eq:local_continuous}$ 

c. A: I hate my boss... (factual)

B: John said that if you hate your boss so much, you should leave your job.

### (26) Embeddability under believe:

a. #I believe that if you're hungry, there are biscuits on the sideboard.

(if biscuit)

b. \*I believe that in case you're hungry, there are biscuits on the sideboard.

(ICC)

c. A: I hate my boss... (factual)

B: I believe that if you hate your boss so much, you should leave your job.