Perspectival biscuits



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1 Introduction

We describe a novel class of biscuit conditional we call the **perspectival biscuit** (PB).

Perspectival biscuits (**PBs**) are characterized by three features:

- (i) a generic pronoun (i.e., impersonal you or one) in the *if*-clause (antecedent);
- (ii) a **perspective-sensitive item** in the main clause (consequent);
- (iii) entailment of a fully-specified consequent proposition.

PBs have the discourse effect of **shifting perspective** in the main clause. For instance:

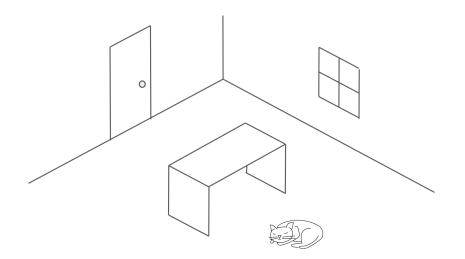
(1) If $\underbrace{\text{you}_{\text{GEN}} \text{ are at the door,}}_{\text{antecedent}}$, the cat is behind the desk. \approx 'The cat is behind the desk, from the point of view of the door.' (biscuit reading)

Biscuit conditionals generally entail their consequent, with the antecedent serving only to suggest discourse relevance:

(2) a. If you're curious, our talk is Sunday at 11:40am. b. <u>There are biscuits on the sideboard</u> if you want them. (Austin 1956) consequent

This is in contrast to **hypothetical** conditionals, which express a conditional dependence, only entailing their consequent when the antecedent is true:

(3) If Arnold went shopping, there are biscuits on the sideboard.



Sentences described as biscuit conditionals typically have **possible** hypothetical readings as well, though they are often somewhat *implausible* and require some creative contexts to make apparent:

- (4) a. Context: the scheduling of talks at a conference is ordered by the level of participants' curiosity. The final slot is Sunday at 11:40am, and to finalize the ordering, we need your input.
 - If you're curious, $(then^1)$ our talk is Sunday at 11:40am. (hyp. reading)
 - b. Context: the sideboard magically produces food when passersby are hungry. There are biscuits on the sideboard if you want them. (hyp. reading)

What makes perspectival biscuits special?

Puzzle: Biscuit readings for PBs only seem to arise with a generic pronoun (i.e., you_{GEN} or one_{GEN}) in the antecedent.

With non-generic DPs, the biscuit reading disappears in favor of a hypothetical reading:

(5) If $\{you_{2SG}/Bob/someone/no one\}$ are/is at the door, the cat is behind the desk.

 \approx 'When one is present at the door, the cat hides behind the desk.' (hyp. reading) (Perhaps the cat is shy.)

The absence of a generic pronoun does not have an effect on the biscuithood of more conventional biscuit conditionals like (2a) and (2b):

(6) a. If your advisor is curious, our talk is Sunday at 11:40am. (biscuit)

¹Biscuit conditionals typically resist *then*; conditionals with *then* "force" a hypothetical reading (Iatridou 1994). However, the reliability of this diagnostic has been challenged by Zakkou (2017), among others.

b. There are biscuits on the sideboard if <u>Caroline</u> wants them. (biscuit)

So why do PBs only arise with generic pronouns?

Our claim: The perspectival biscuit reading arises because the generic pronoun in the antecedent licenses generic quantification exclusively over **individuals**, not situations.

Preview of our account

- Most prior accounts of biscuit conditionals work with standalone antecedent and consequent propositions.
- Instead, we analyze PBs as a conditional paraphrase of a single generically quantified expression, as in this example modified from Krifka et al. (1995):
 - (7) a. Mary smokes after dinner.
 - b. If it's after dinner, Mary smokes.
 - c. [GEN $s, x : x = Mary \land$ it's after dinner in s] x smokes in s.
- Like (7c), the material in the *if*-clause acts as an explicit restrictor, but unlike (7c), it does so only for (perspective-holding) individuals:
 - (8) [GEN x: x is at the door] the cat is behind(x) the desk.

Roadmap

- 2. Empirical description: perspective, biscuithood, and genericity
- 3. **Prior accounts**: what predictions do they make for PBs?
- 4. Our account: how do we handle the generic puzzle?
- 5. **Discussion**: what do PBs tell us about genericity and biscuits more generally?

2 Empirical description

PBs shift perspective for perspective-sensitive items in the consequent. What does that mean, formally?

2.1 The semantics of perspective

We use the following notion of perspective from Bylinina et al. (2015):

Perspective-sensitive items (henceforth **PSIs**) are lexical items whose meaning is dependent on a perspective center (a.k.a. **perspective holder**), and meet the following criteria:

(i) **Default speaker orientation**:

In default environments, the perspective holder is the **speaker**.

(ii) **Shiftability**:

In certain environments, the perspective holder can shift to other entities (e.g., addressee, attitude holder, salient discourse entity, etc.)

A wide variety of expressions are considered PSIs under this definition, including, but not limited to:

- **spatial prepositions** like *behind*, *in front of*, *left*, *right*, *near*
- location-sensitive predicates like local, foreigner
- predicates of personal taste like *tasty*, *fun*, *expensive*
- ... and many more

This definition is meant to omit other context-sensitive expressions, such as indexicals like I and *here*, whose meaning do not shift² but remain tied to the speaker and context of utterance (Kaplan 1989).

How is perspective captured in the semantics?

- We assume an **implicit perspective holder argument** for PSIs, so ostensibly twoplace predicates like behind(x, y) have a three-place denotation like the following³:
 - (9) $\llbracket \text{behind} \rrbracket^{g,c} = \lambda z . \lambda y . \lambda x. x \text{ is behind } y \text{ from } z \text{'s perspective}$
- In unmodified contexts, the perspective holder argument can be determined **contextually** via the assignment function g, in a process analogous to anaphora resolution, e.g.:

(10) $g = [1 \rightarrow c_{\text{speaker}}, 2 \rightarrow c_{\text{addressee}}, 5 \rightarrow \text{Bob}]$

• Normally, this is done **implicitly**, but a perspective holder z can be made **explicit** with adjuncts like from (z)'s perspective:

 $^{^2 \}mathrm{Setting}$ as ide shifty indexicals (Anand 2006; Deal 2020), which are still not quite as freely shift able as PSIs.

 $^{^{3}}$ A fully compositional account of how the perspective holder variable alters the directional component of the meaning of spatial prepositions like *behind* is given by Mulligan and Rawlins (2022) using Vector Space Semantics (Zwarts 1997; Zwarts and Winter 2000).

(11) The cat is behind the desk from $your_{2sg}$ perspective. (PH: $c_{addressee}$)

Note: making the perspective holder argument overt using an explicit *from*-phrase is not the same as shifting perspective in a PB.

• Making the perspective holder overt just helps **fully-specify** the proposition (i.e., make it truth-evaluable)

Simply inserting a proposition with a fully-specified PSI (like (11)) in the consequent of a conditional **does not make it a PB**. For instance:

- (12) a. Coreferential DP in antecedent: If you_{2SG} are at the door, the cat is behind the desk from $your_{2SG}$ perspective. (PH: $c_{addressee}$; hyp. reading)
 - b. Distinct DP in antecedent: If Bob is at the door, the cat is behind the desk from $your_{2sg}$ perspective. (PH: $c_{addressee}$; hyp. reading)

Why not? These sentences both have perspective for behind fixed to the addressee, but not because of the if-clause.

- Fails PB feature (i): the antecedent(s) in (12a) and (12b) do not contain a generic pronoun
 - In fact, the *if*-clauses do not interact at all with the perspective for *behind*
 - Instead, they give conditions under which the consequent is true (i.e., a hypothetical reading)
- Fails PB feature (iii): **entailment** of a fully-specified consequent proposition

In the following section, we'll unpack what exactly we mean by condition (iii), the feature which makes PBs biscuit-like.

2.2 Biscuit conditionals

We've already seen some examples illustrating the basic idea behind biscuit conditionals, but a precise definition for all biscuits is tricky.

What makes a conditional a biscuit conditional?

Ostensibly, the hallmark property of biscuit conditionals is **consequent entailment** (**CE**):

 (\mathbf{CE}) Biscuit conditionals entail their consequent, regardless of the truth of the antecedent.

(13) $(you \ don't \ want \ biscuits) + (2b) \Rightarrow$ There are biscuits on the sideboard.

However, CE is neither a necessary nor sufficient condition for biscuit conditionals (Rawlins 2020):

- Not sufficient: unconditionals (Rawlins 2008) and concessives (König 1986).
 - CE, but can be inferred by exhaustively quantifying over antecedents
- Not necessary: questions, commands, and false consequents (Siegel 2006).
 - No/undefined CE, but convey a biscuit-like move with their antecedents

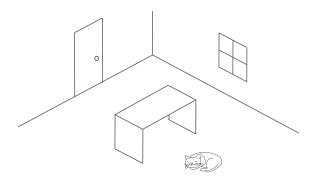
CE is also difficult to evaluate in the case of PBs:

- The consequent of PBs contain a perspective-sensitive item, which, in isolation, contains a free perspective holder variable:
 - (14) λz . [The cat is behind(z) the desk.]
- Hard to say whether an underspecified consequent proposition is entailed, especially if the variable is dependent on the antecedent (Francez 2015) I'll say more on that later.

So what *is* entailed in PBs?

We claim there is intuitively some non-perspectival component of the PSI that is still entailed.

- E.g., for *behind*: that there is a stable spatial arrangement between the cat and the desk.
- To illustrate: the following proposition using the PSI *in front of* with a different perspective holder is **truth-conditionally equivalent** to (1), our central PB example using the PSI *behind* with a perspective from the door:
 - (15) The cat is *in front of* the desk from $your_{2sc}$ (the scene viewer)'s perspective.



• We claim that what is unconditionally conveyed by a PB is exactly the stable propositional content shared by (15) and (1): the spatial relationship between the objects, relative to the same situation of evaluation.

• This content does not seem to be particularly conditionally dependent on the antecedent or any other information.

Going forward, we adopt a version of a more general, dynamic notion of CE proposed by Rawlins (2020):

(CE') Biscuit conditionals entail a contextual update of a fully-specified, stable proposition.

For our purposes:

- "contextual update" means dynamically adding a proposition to the discourse context; and
- "fully-specified" means saturating a PSI-containing proposition so it is no longer perspectivedependent, capturing the stable spatial meaning illustrated above.

2.3 Generic pronouns

Lastly, we turn to some background on the apparent secret ingredient in PBs: generic pronouns like one_{GEN} and you_{GEN}^4 in the antecedent. For instance:

a. You_{GEN} never know what the weather will be like a month out from now.
b. It's important to brush your_{GEN} teeth.

The analysis of the generic or impersonal pronouns has received surprisingly little attention in the formal semantics literature, compared to the following two phenomena described as generic (Krifka et al. 1995):

- kind-referring predicates, like the non-referring DP beavers in (17a); and
- characterizing sentences, like (17b).
- (17) a. Beavers build dams. (kind genericity)
 b. Dave takes the 6 o'clock train home. (characterizing genericity)

Both types of generics are typically handled with some type of **generic operator**, usually written as GEN. As a non-selective quantifier, GEN can account for both types of phenomena (Carlson 1989):

• kind-referring predicates have a bound **entity** argument:

(18) [GEN x: beaver(x)] build-dams(x)

⁴For the purposes of this talk, generic you is essentially interchangeable with generic *one*, but we will mostly stick with generic you for judgments due to its familiarity in the dialect of the authors.

• characterizing sentences (additionally) have a bound **situation** argument:

(19) [GEN x, s: x = Dave in s] takes-6pm-train(x) in s

• GEN is usually decomposed as a universal quantifier with a contextual restriction function (C), used to account for exceptions:

(20) =
$$[\forall x, s: x = \text{Dave} \land C(x, s) \text{ in } s]$$
 takes-6pm-train(x) in s

where C might restrict the relevant domain of situations to those in which it is a normal weekday, in which Dave does not have any events or obligations after work, etc.

The semantics of generic one

To our knowledge, the most complete formal analysis of impersonal pronouns comes from Moltmann (2006, 2010):

- Generic *one* can also be captured using an operator like GEN over **entities** or individuals.
- According to Moltmann, it also involves "generic simulation," a kind of inference from the first person.
- Generic simulation is useful for analyzing other PSIs, appearing in an analysis of predicate of personal taste *tasty* given by Pearson (2013).
- In our analysis, we will borrow from Pearson (2013) the identification relation I, inspired by Moltmann:
 - (21) $I(c_{\text{speaker}}, x)$ ("the speaker identifies with x")
 - I appears as an additional contextual stipulation alongside C in the restrictor.
 - This captures the intuition that perspective-taking is a kind of generalization from first-person experience.

The distribution of generic one

Generic one (and generic you) cannot appear just anywhere. Because its appearance assumes quantification under an operator, generic one is strange in simple, non-quantificational environments:

- (22) a. #One puts away the dishes.b. #One misses the bus.
 - c. #One has a nose.

(Moltmann 2006)

They are more felicitous in modalized contexts (Moltmann 2006):

- (23) a. One must put away the dishes.
 - b. One occasionally misses the bus.
 - c. If one has a nose, one can breathe.

As such, it's unclear what the meaning of a proposition containing a free instance of a generic pronoun is.

- Sentences like those in (22) can be paraphrased with phrases like *someone*, *people*, or *the typical person*, but as Moltmann observes, these come with additional presuppositions and inferences that are not present with the generic pronoun:
 - (24) a. Someone puts away the dishes.
 - b. People miss the bus.
 - c. The typical person has a nose. (Moltmann 2006)

As we'll see ahead, the problems with generic pronouns in unquantified contexts make it difficult to assess biscuithood when the antecedent is treated as a standalone proposition:

(25) #You_{GEN} are at the door.

3 Prior analyses

How do prior accounts of biscuit conditionals handle perspectival biscuits?

Prior analyses of biscuit conditionals typically fall into one of two general families of strategies:

• Speech act conditionals and scope:

The *if*-clause in a biscuit reading attaches at a **syntactically higher level** than *if*clauses in a hypothetical conditional, interacting at the level of **speech acts** (Davison 1979; Iatridou 1991; Siegel 2006) or **topicality** (Ebert et al. 2014).

• Pragmatic inference:

The *if*-clause in a biscuit is **no different syntactically** or compositionally from the *if*-clause in a hypothetical conditional, but the biscuit reading is derived **pragmatically** when the truth conditions of the antecedent and consequent are thought to be logically independent (**epistemic independence**) (Franke 2007, 2009).

I'll consider each of these families in turn.

3.1 Speech act conditionals

The main idea common to these accounts is that the antecedent is supplying a condition on something other than the possible worlds in which the consequent is true.

(deontic necessity) (frequency adverb) (antecedent of conditional)

- Davison (1979): Biscuits provide an appropriateness condition on the "well-formedness of a speech act [of the consequent]".
 E.g., the biscuit interpretation of (2a):
 - (26) \approx 'If you're curious, an utterance of "Our talk is Sunday at 11:40am" is appropriate in this context.'
- Iatridou (1991): Speech act-modifying *if*-clauses scope higher than hypothetical *if*-clauses.
- Siegel (2006): Biscuit *if*-clauses quantify over potential literal acts; relevance is contextually restricted.

For PBs, the idea that *if*-clauses restrict at the speech act level is attractive, particularly if one assumes a dedicated syntactic position for perspective holders (e.g., Speas and Tenny 2003).

The perspective-shifting *if*-clause for PBs may attach at a level different from that for hypotheticals, but also perhaps **at a different level from the speech act**, too:

(27) a. If you're curious, if you're at the door, the cat is behind the desk. (b. + PB)b.#?If you're at the door, if you're curious, the cat is behind the desk. (b. only?)

Perspective-shifting if may therefore be handled distinctly from relevance-based biscuits, though the judgements for these sentences (and others like it) are muddy.

Overview of speech act accounts and PBs

- PBs can co-occur with normal (relevance)-based biscuit antecedents, but not in arbitrary orders, suggesting a distinct mechanism;
- no specific compositional predictions about which component of the consequent proposition is targeted (see Ebert et al. 2008);
- no predictions about the generic.

3.2 Pragmatic inference

Pragmatic accounts treat biscuit and hypothetical conditionals as syntactically equivalent; distinct readings emerge via pragmatic reasoning about *epistemic independence* of the antecedent and consequent (Franke 2007):

Let's see what that reasoning looks like for (2a), where for the form If p, q:

p = 'You're curious.' q = 'Our talk is Sunday at 11:40am.'

• Two propositions p,q are **epistemically independent** if, relative to an agent's epistemic state, learning the truth of one proposition gives you no information toward

settling the truth of the other.

- E.g., a reasonable agent knows that whether or not a person is currently curious, i.e., a mental state, cannot tell you anything about whether or not a talk is scheduled at a particular time.
- Formally:
 - A proposition x is **epistemically possible** (\Diamond_A) relative to an agent A's epistemic state E_A iff $x \cap E_A \neq \emptyset$.
 - Two propositions p and q are **epistemically independent** for agent A iff, for all combinations of issues $P \in \{p, \neg p\}, Q \in \{q, \neg q\}$:

if $\Diamond_A P \land \Diamond_A Q$, then $\Diamond_A (P \cap Q)$.

- Franke's proof: assuming antecedent p is at least epistemically possible, consequent entailment (of q) follows logically from epistemic independence.
- Biezma and Goebel (2023) and Goebel (2017): extension to *factual independence*, by taking into account law-like dependencies in addition to epistemic states to handle **factual conditionals**, where the antecedent is a proposition both interlocutors already take for granted.

Chimericals

Of the pragmatic accounts, PBs most resemble **chimerical conditionals** (Francez 2015), which are conditionals which have simultaneous hypothetical and biscuit interpretations. For example:

- (28) If you are going to Barcelona, I know a local tailor. (Francez 2015)
 a. If you are going to Barcelona, I know a local tailor there. (bisc.)
 - b. If you are going to Barcelona, I know a tailor local to your destination. (hyp.)

Francez claims that this ambiguity in readings arises when there are possibly **distinct interpretations** for a (potentially implicit) **context-sensitive argument in the consequent** (e.g., the location parameter for *local*).

1. When the argument is a **rigid designator** (*local* to Barcelona), the antecedent and consequent can be shown to be epistemically independent, giving rise to a biscuit reading.

Consequent of (28a): \approx 'I know a tailor named Jordi in Barcelona.'

2. When the argument is an **individual concept** or variable (*local*, relative to some location), dependence cannot be ruled out, giving rise to a hypothetical:

Consequent of (28b): \approx (I know tailors in three locales: New York, London, and Milan).' 'I know a local tailor depending on your destination.'

Are PBs chimerical conditionals?

PBs do appear to fit the bill, and at least predict the hypothetical reading with non-generic DPs:

- There is a context-sensitive (perspective-sensitive) item in the consequent, leading to multiple potential fully-specified propositions for the consequent; and
- When the perspective holder is a bound variable, the account correctly predicts a hypothetical reading for some non-generic DPs as in (5).

So far, I have characterized the puzzle as:

- (G–B) Generic pronouns lead to perspective-shifting biscuit readings (PB).
- (NG–H) Non-generic DPs lead to hypothetical readings.

However, these are **only the most prominent readings**. In fact, the full space of possibilities seem in principle possible:

- (NG–B) Non-generic DPs can produce "perspectival" readings when the DP in the antecedent co-occurs as the perspective holder in the consequent:
 - (29) If Bob is at the door, the cat is behind the desk (from Bob's perspective).

(bisc.)

This biscuit reading **can** perhaps be predicted by the Franecz account for chimericals on the basis of epistemic independence:

- An agent's knowledge of the world (namely, that cats are more often indifferent than not) may rule out a hypothetical reading when consequent has a rigid designator
- Independence is unintuitive to reason about in the case of $\neg p \cap q$ (negated antecedent), but possible
- (G-H) The generic pronoun also seems to be able to produce hypothetical readings, i.e., for (1):
 - (30) If you_{GEN} are at the door, the cat is behind the desk. \approx 'When an arbitrary person is present at the door, the cat hides behind the desk.' (compatible with various perspective holders) (hyp.)

However, this reading is **not** predicted by any of the independence-based accounts (nor is the primary PB reading, (G-B)).

- As seen in Sec. 2: a sentence containing a free instance of generic *you* cannot serve as a well-formed proposition, so it is unclear how to apply Franke's notion of independence.
- Attempts to rephrase the generic pronoun in the antecedent into a well-formed proposition tip the interpretation back into hypothetical reading territory:
 - (31) If {someone/anyone/an arbitrary person} is at the door, the cat is behind the desk. (hyp.)

Overview of pragmatic accounts and PBs

- Pragmatic accounts derive biscuit interpretations from reasoning about independence.
- For PBs, on a naive dissection of the conditional, neither the antecedent nor consequent propositions are fully well-formed;
 - 1. The antecedent contains a generic pronoun, which is infelicitous outside of modalized contexts;
 - 2. The consequent contains a free perspective holder variable.
- Francez (2015) addresses the second problem by identifying context-dependent arguments as the locus of alternating biscuit and hypothetical readings (for us, the perspective holder variable of the PSI);
- However, this account only predicts chimericity for non-generic DP antecedents, and has no clear predictions for our primary PB reading for generic *you*.

We now present an account which attempts to handle all of the readings presented thus far.

4 Our analysis

We have seen that accounts that take the antecedent and consequent propositions as atomic are problematic for PBs:

- In the **antecedent**: the meaning of the unmodalized generic *you* in PBs cannot be coerced into a stable proposition equivalent to those produced by similar quantified expressions like *someone* or *anyone*
- In the **consequent**: the PSI contains a potentially free perspective holder variable (though this problem can be resolved by making the argument explicit, as done by Francez in his analysis of chimerical conditionals).

Rather than treat PBs as a function of two separate, fully-specified propositions, we claim that PBs are better understood as a single, generically quantified expression.

• In a standard tripartite structure for quantifiers, a quantified expression has the following form:

(32) [OPERATOR : RESTRICTOR] SCOPE

- As observed by Partee (1995), quantified sentences that can be analyzed with this form can often be re-expressed in terms of a conditional.
- The generic quantifier GEN is no exception, working for both genericity of kinds and genericity of characterizing sentences:
 - (33) a. Beavers build dams. (repeated (17a)) b. [GEN x: beaver(x)] build-dams(x) (repeated (18)) c. \approx 'If something is a beaver, it builds dams.'
 - (34) (repeated (7), from Krifka et al. (1995)):
 - a. Mary smokes after dinner.
 - b. [GEN $s, x : x = Mary \land$ it's after dinner in s] x smokes in s.
 - c. \approx 'If it's after dinner, Mary smokes.'
- These paraphrases follow straightforwardly from Kratzer (1981)'s thesis that if-clauses are nothing but the restrictors of various operators.
- In their discussion of biscuit conditionals, Biezma and Goebel (2023) also point out paralellisms between *if*-clauses and dependencies in quantificational structures.

Given these observations, we can analyze our main PB(1) using an analogous structure:

(35) a. If you_{GEN} are at the door, the cat is behind the desk. b. [GEN s, x : x is at the door in s] the cat is behind(x) the desk in s.

This is a good start:

- Generic *you* is correctly analyzed as a variable quantified over GEN;
- That variable appears bound in the perspective holder for consequent PSI *behind*;
- The relevant perspective is provided compositionally by the antecedent, now analyzed as the restrictor for GEN.

However, this alone does not offer any insights yet into our main puzzle:

Why does a biscuit reading arise with generic you?

We claim that, because GEN is a non-selective quantifier, we can analyze PB antecedents with generic *you* more like generic kinds; that is, **by quantifying exclusively over individuals, rather than situations**. Therefore, a properly perspectival biscuit reading of (1) would look more like this:

(36) [GEN x : x is at the door] the cat is behind(x) the desk in s_0 . (where s_0 is the current situation of evaluation) = $[\forall x : \operatorname{at}(x, \operatorname{the-door}) \land C(x) \land I(c_{\operatorname{speaker}}, x)]$ behind(the-cat, the-desk, x) in s_0 .

This captures several key intuitions:

- When making a purely perspective-shifting claim, we should hold the state of affairs of our world to be **constant**; we only want to draw attention to a particular manner of describing that state.
- The individual used as the perspective holder can be thought of a **kind**, where the restrictor provides the relevant domain restriction(s):
 - − What kind of "kind" is it? → "being-at-the-door-ness" as a property of individuals serving as perspective holders;
 - The contextual restriction C limits such individuals to those that are facing towards the objects of discussion, with normal vision, etc.;
 - The identification relation I further limits such individuals to those that can be related to in a first-personal way: spatial perspective for arbitrary perspective holders uses a relative frame of reference, just as in egocentric (speaker-centered) situations (Mulligan and Rawlins 2022).

As for the hypothetical readings, they emerge the usual way: by quantifying over possible worlds or situations as per the Lewis-Kratzer-Heim view of *if*-clauses as domain restrictors (Heim 1982; Kratzer 1981; Lewis 1975).

- In the case of non-generic DPs, we simply quantify over only situations: $[\forall s]$.
- In the case of generic quantification, we quantify over both individuals and situations as in (35b): [GEN s, x].
 - In fact, this might be the best LF for a **counterfactual** version:
 - (37) If you were at the door, the cat would be behind the desk (from your perspective).
 - (37) and (1) arguably have the same usage conditions, and we are agnostic about which *cognitive* strategy (e.g., mental simulation) is used;
 - We do claim they employ distinct *linguistic* strategies ([GEN s, x] vs. ([GEN x]), and this difference is manifested in the subjunctive morphology.

Summary of main readings:

- (G-B) Generic pronoun, PB biscuit reading:
 - (38) [GEN x: x is at the door] the cat is behind(x) the desk.
- (NG-H) Non-generic pronoun, hypothetical reading (possibly chimerical):
 - (39) a. $[\forall s: Bob is at the door in s]$ the cat is behind(g(i)) the desk. (compatible with any discourse-anaphoric perspective holder: speaker, Bob, etc.)
 - b. If someone is at the door, ... $[\forall s: \exists x: x \text{ is at the door in } s]$

Summary of possible, less-prominent readings:

- (G-H) Generic pronoun, hypothetical reading:
 - (40) [GEN s, x: x is at the door in s] the cat is behind(x) the desk. (generic entity variable optionally bound; also compatible with discourseanaphoric perspective holders)
- (NG-B) Non-generic pronoun, perspective-aligned but not PB/perspectiveshifting – biscuit reading (possibly chimerical):
 - (41) $[\forall s: \operatorname{Bob}_k \text{ is at the door in } s]$ the cat is behind(g(k)) the desk. (special case of (39a): discourse-anaphoric to entity in the antecedent)

5 Discussion

Main points:

- We have given an account of perspectival biscuits, a kind of biscuit conditional which shifts perspective for PSIs in the consequent to a perspective given in the antecedent.
- We claim that perspectival biscuits are best treated as a single generically quantified proposition over individuals, licensed by the generic pronoun, where the restriction in the antecedent picks out the relevant perspective-holding properties and the fully-specified consequent proposition is unconditionally entailed.
- Overall, our account suggests that, despite the similarities in conditional form, there may be multiple compositional strategies leading to the classic empirical signature of a biscuit conditional.

There are still several remaining issues to explore. Here are just a couple:

Negated antecedents PBs behave somewhat differently from regular biscuit conditionals in that they do not seem to allow inference with negated antecedents (c.f. (13)):

- (42) a. ?If you_{GEN} 're not at the door, the cat is behind the desk.
 - pprox 'The cat is behind the desk, from the point of view of the door.'
 - b. [GEN $x : \neg(x \text{ is at the door})$] ...

Why do negated antecedents fail to act as felicitous PBs?

- One reason: generically quantified perspective holder with the restrictor [x is not at the door] is compatible with too many potential locations, and thus cannot be contextually constrained to a singular perspective.
- Negated antecedents *can* work for PBs when the domain of possible perspective holders is binary:
 - (43) Context: The door to backstage is only accessible from an alley between 1st and 2nd street.
 If you're not coming from 1st street, backstage is to the left. (You must be coming from 2nd street.)

The data in (43) seem to be supported by another relevant observation, which is that generic *you* resists focus:

(44) #If YOU_{GEN} 're at the door, the cat is behind the desk.

Assuming that focused constituents draw attention to sets of possible **alternatives** (Rooth 1992), it would make little sense to emphasize a constituent corresponding to the *variable* in a quantified expression.

On the other hand, the (perspectival) information contained in the *restrictor* is compatible with sets of alternative perspectival properties:

- (45) a. If you're at the DOOR, the cat is BEHIND the desk.
 - b. If you're at the WINDOW, the cat is to the LEFT of the desk.

These data seem to support our restrictor-based account of PBs, and align with the view of Biezma and Goebel (2023) that if-clauses may play a role in introducing QUDs Roberts (1996) for biscuits.

Generic pronouns in other biscuit conditionals This analysis raises the question of whether genericity plays a role in biscuit conditionals more generally.

• For instance, the *you* found in many classic examples of biscuit conditionals in the literature might very well be instances of generic *you*:

- (46) a. If you're hungry, there's pizza in the fridge.
 - b. If you think about it, a hot dog is a sandwich.
- Of course, some other uses of *you* in the antecedent are clearly referential, as in this factual conditional from Goebel (2017):
 - (47) A: I am starving!B: If you are so hungry, there are sandwiches in the fridge.

But in most cases, it's difficult to distinguish reliably between you_{2SG} and you_{GEN} in biscuit conditionals, and better diagnostics are needed.

Thank you!

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References

Anand, Pranav (2006). "De de se". Thesis. Massachusetts Institute of Technology.

- Austin, J. L. (1956). "Ifs and cans". In: Proceedings of the British Academy, vol. 42, pp. 109–132.
- Biezma, María and Arno Goebel (2023). "Being pragmatic about biscuits". In: *Linguistics* and Philosophy 46.3, pp. 567–626.
- Bylinina, Lisa, Eric McCready, and Yasutada Sudo (2015). "Notes on perspective-sensitivity". In: *Donum Semanticum*, pp. 67–79.
- Carlson, Greg N. (1989). "On the Semantic Composition of English Generic Sentences". In: Properties, Types and Meaning. Ed. by Gennaro Chierchia, Pauline Jacobson, Francis J. Pelletier, Gennaro Chierchia, Barbara H. Partee, and Raymond Turner. Vol. 39. Dordrecht: Springer Netherlands, pp. 167–192.
- Davison, Alice (1979). "On the semantics of speech acts". In: *Journal of Pragmatics* 3, pp. 413–429.
- Deal, Amy Rose (2020). A Theory of Indexical Shift: Meaning, Grammar, and Crosslinguistic Variation. The MIT Press.
- Ebert, Christian, Cornelia Ebert, and Stefan Hinterwimmer (2014). "A unified analysis of conditionals as topics". In: *Linguistics and Philosophy* 37.5, pp. 353–408.
- Ebert, Christian, Cornelia Endriss, and Stefan Hinterwimmer (2008). "A unified analysis of indicative and Biscuit conditionals as topics". In: *Proceedings of SALT 28.* Ed. by T. Friedman and S. Ito, pp. 266–283.
- Francez, Itamar (2015). "Chimerical conditionals". In: Semantics and Pragmatics 8.
- Franke, Michael (2007). "The pragmatics of biscuit conditionals". In: Proceedings of the 16th Amsterdam Colloquium. Ed. by Maria Aloni, Paul Dekker, and Floris Roelofsen, pp. 91– 96.

- Franke, Michael (2009). Signal to act: Game theory in pragmatics. Institute for Logic, Language and Computation Amsterdam.
- Goebel, Arno (2017). "Laws for biscuits: Independence and dependence in conditionals". In: Semantics and Linguistic Theory. Vol. 27, pp. 377–396.
- Heim, Irene Roswitha (1982). "The semantics of definite and indefinite noun phrases". PhD thesis. University of Massachusetts Amherst.
- Iatridou, Sabine (1991). "Topics in Conditionals". Ph.D. Dissertation. MIT.
- (1994). "On the Contribution of Conditional then". In: Natural Language Semantics 2, pp. 171–199.
- Kaplan, David (1989). "Demonstratives: An essay on the semantics, logic, metaphysics and epistemology of demonstratives and other indexicals". In: *Themes from kaplan*. Ed. by Joseph Almog, John Perry, and Howard Wettstein. Oxford University Press, pp. 481–563.
- König, Ekkehard (1986). "Conditionals, concessive conditionals and concessives: areas of contrast, overlap and neutralization". In: On Conditionals. Ed. by Elizabeth Traugott, Alice G. B. ter Meulen, Judy Reilly, and Charles Ferguson. Cambridge University Press, pp. 229–246.
- Kratzer, Angelika (1981). "The Notional Category of Modality". In: Words, Worlds, and Contexts. Ed. by Hans J. Eikmeyer and Hannes Rieser. Berlin, Boston: DE GRUYTER.
- Krifka, Manfred, Francis Jeffry Pelletier, Gregory Carlson, Alice Ter Meulen, Gennaro Chierchia, and Godehard Link (1995). "Genericity: an introduction". In: *The generic book*. Ed. by Gregory Carlson and Francis Jeffry Pelletier. Chicago.
- Lewis, David (1975). "Adverbs of Quantification". In: *Formal Semantics of Natural Language*. Ed. by Edward L. Keenan. Cambridge: Cambridge University Press, pp. 3–15.
- Moltmann, Friederike (2006). "Generic one, arbitrary PRO, and the first person". In: *Natural Language Semantics* 14.3, pp. 257–281.
- (2010). "Generalizing Detached Self-Reference and the Semantics of Generic One". In: Mind & Language 25.4, pp. 440–473.
- Mulligan, Karl and Kyle Rawlins (2022). "A compositional semantics for spatial perspectiveshifting adjuncts". In: *Proceedings of the West Coast Conference on Formal Linguistics*. Vol. 40. Stanford, California.
- Partee, Barbara H. (1995). "Quantificational Structures and Compositionality". In: Quantification in Natural Languages. Ed. by Emmon Bach, Eloise Jelinek, Angelika Kratzer, and Barbara H. Partee. Studies in Linguistics and Philosophy. Dordrecht: Springer Netherlands, pp. 541–601.
- Pearson, Hazel (2013). "A Judge-Free Semantics for Predicates of Personal Taste". In: Journal of Semantics 30.1, pp. 103–154.
- Rawlins, Kyle (2008). "(Un)conditionals: an investigation in the syntax and semantics of conditional structures". Ph.D. Dissertation. UC Santa Cruz.
- (2020). "Biscuit Conditionals". In: The Wiley Blackwell Companion to Semantics. Ed. by Daniel Gutzmann, Lisa Matthewson, Cécile Meier, Hotze Rullmann, and Thomas Zimmermann. John Wiley & Sons, Ltd, pp. 1–26.
- Roberts, Craige (1996). "Information Structure in Discourse: Towards an Integrated Formal Theory of Pragmatics, 1998 revision". In: OSUWPL vol. 49: Papers in Semantics. Ed. by Jae Hak Yoon and Andreas Kathol. The Ohio State University, Department of Linguistics.

- Rooth, Mats (1992). "A theory of focus interpretation". In: *Natural Language Semantics* 1, pp. 75–116.
- Siegel, Muffy E. A. (2006). "Biscuit Conditionals: Quantification over Potential Literal Acts". In: Linguistics and Philosophy 29.2, pp. 167–203.
- Speas, Peggy and Carol L. Tenny (2003). "Configurational properties of point of view roles". In: *Linguistik Aktuell/Linguistics Today*. Ed. by Anna Maria Di Sciullo. Vol. 57. Amsterdam: John Benjamins Publishing Company, pp. 315–344.
- Zakkou, Julia (2017). "Biscuit conditionals and prohibited 'then". In: *Thought: a journal of philosophy* 6.2, pp. 84–92.
- Zwarts, Joost (1997). "Vectors as relative positions: a compositional semantics of modified PPs". In: *Journal of Semantics* 14.1, pp. 57–86.
- Zwarts, Joost and Yoad Winter (2000). "Vector Space Semantics: A Model-Theoretic Analysis of Locative Prepositions". In: *Journal of Logic, Language and Information* 9.2, pp. 169–211.