

Decomposing ‘as if’*

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Abstract ‘As if’ constructions have been analyzed as only verbal (Bücking 2017) or idiomatic (Bledin & Srinivas 2019, 2020). We argue that ‘as if’ constructions have the same distribution as any clausal similative (i.e. any ‘as’ construction): they can associate with verbal arguments or propositions. And we argue that ‘as if’ constructions are a common and productive cross-linguistic phenomenon, reliably formed with a relativizer; a question subordinator; and X-marking. We thus present a compositional analysis of the constructions based on extant analyses of *as* (and its cross-linguistic counterparts) as a relativizer (Rett 2013, among others); *if* as a question subordinator (Starr 2014b, among others); and X-marking as encoding a similarity relation across possible worlds (Schulz 2014; von Stechow & Iatridou 2020). In addition to being compositional, this approach can better account for the wide distribution of ‘as if’ constructions both within a language and across languages.

Keywords: similatives, hypothetical comparatives, conditionals, subjunctive, X-marking

1 Introduction

1.1 The data, traditionally

Languages – we’ll focus on English initially – can invoke hypothetical scenarios as a parameter of comparison or analogy using constructions like ‘as if’ (as in 1). For this reason, they’ve been dubbed ‘hypothetical comparatives’ (Bücking 2017).

- (1) a. She danced as if she were a trained dancer. *manner*
b. The soup smelled as if it had cumin in it. *perception*
c. As if I have time to answer all these emails! *matrix*

We will avoid this term, as we’d like to instead stress the commonalities between these constructions and the standard similatives in 2.

- (2) a. She danced as/like a trained dancer {did / might / would}. *manner*

* Thanks to audiences at the UCLA Syntax/Semantics Seminar and the Cornell Semantics Working Group. For helpful discussion we also thank Dylan Bumford, Sam Cumming, Teruyuki Minzuno, Frederike Moltmann, Marcin Morzycki, Sarah Murray, and Roumyana Pancheva.

- b. The soup smelled as/like cumin does. *perception*
- c. Like I have time to answer all these emails! *matrix*

We use the term ‘similative’ to mean any construction with a relative clause introduced by *as* or *like* or any other similarity term (Haspelmath & Buchholz 1998; Rett 2013). Under this definition, equatives like *A is as tall as B* – traditionally, the dual of comparatives – count as similatives, by virtue of that second *as* clause.

Traditionally, constructions like 1 have been looked at in relative isolation, and have been taken to raise several interesting questions for a compositional semantic analysis: Where does the resemblance relation come from? What is the source of the ‘hypothetical’ meaning? What conditions the difference between the manner interpretation in 1a and the perception interpretation in 1b? And how can matrix examples like 1c, with no explicit standard of comparison, be analyzed?

1.2 Previous analyses

We are aware of two different groups of previous formal semantic accounts of ‘as if’ constructions in the literature. Bücking (2017) investigates the construction in English and German (in particular, *wie wenn* ‘how if’; *als wenn* ‘as if’; *wie ob* ‘how whether’; and *als ob* ‘as whether’), but focuses only on the manner use in 1a. Because of this focus, the analysis is particularized in a way that doesn’t generalize clearly or well to the non-manner cases in 1b and 1c: Bücking analyzes ‘as if’ clauses as event modifiers, which incorrectly restricts their use to constructions in which they are associated with verbs or verbal arguments (more on this in §2).

That said, Bücking’s analysis is the clearest predecessor to our proposal both in terms of its predicted truth conditions and the compositionality of their derivation. He analyzes *wenn* and *als* as lexicalizing a resemblance relation, an explicit similarity relation developed by Umbach & Gust (2014) for manner uses of *such*. He attributes the lack of commitment to the truth of the ‘as if’ clause – what we will characterize in §2 as non-veridicality – to ‘if’ (or ‘whether’), treating it as encoding the same sort of Stalnakerian ordering on possible worlds that we do.

In two separate papers (2019; 2020), Bledin & Srinivas provide semantic analyses of all three constructions in 1. Their accounts diverge primarily from ours in that they argue that ‘as if’ constructions should not be analyzed compositionally. The result is one analysis for the constructions in 1a and 1b – the manner and perception uses – in which ‘as if’ is an idiomatic verbal modifier (Bledin & Srinivas 2019), and one analysis for the construction in 1c – the matrix use – in which the denotation of the idiomatic ‘as if’ encodes an exclamation operator (Bledin & Srinivas 2020).

Their account of 1a and 1b is ultimately somewhat similar to the one in Bücking (2017), in that it encodes a similarity relation and an ordering source on possible

worlds, But it improves on Bücking’s account in its ability to generalize to perceptual sources (needed for 1b) via a very sophisticated treatment of thematic roles. Their account of 1c takes for granted that matrix ‘as if’ constructions are exclamations, and hard-wires into the idiom an exclamation operator that ranges over propositions and expresses ‘speaker incredulity’.

Bledin & Srinivas offer a number of arguments that *as if* should not receive a compositional analysis; many of them hinge on the assumption that, if *as if* were compositional, it would behave very similarly to the similar construction in 3.

- (3) a. Pedro danced as if he were possessed by demons.
b. Pedro danced as he would if he were possessed by demons.

We, in contrast, are not of the opinion that there are only trivial differences between the sentences in 3, so we are not as worried about their different behavior. In §2 we offer alternative empirical considerations that we believe make a strong case for a compositional analysis of ‘as if’ constructions.

But it is important to note that Bledin & Srinivas (2019) observe a few parallels between the semantic behavior of ‘as if’ constructions and other *if*-phrases that suggest the need for a common explanation. Among them is the observation that both generate non-veridical entailments (more on this in §2.3; that both license the subjunctive (more on this in §2.4); and that they both demonstrate failure of antecedent-strengthening and antecedent disjunction-strengthening.

2 A different empirical perspective

We differ from previous analyses in taking a broader stance on which constructions and languages should be subsumed by the account. We argue that a theory of ‘as if’ constructions should account for their status as a subspecies of similative; their cross-linguistic productivity; the differences between verbal and propositional ‘as if’ constructions; for their (biased) non-veridicality; and for the observation that ‘as if’ clauses are X-marked.

2.1 Similatives generally

Similatives are constructions containing relative clauses headed by *as*, *like*, or other similarity terms. In these constructions, *as* and its counterparts can range over a variety of different semantic entities in different syntactic configurations (Rett 2020).

- (4) a. A is as tall as B. *degrees* (specific equative)
b. The canvas is white as snow. *properties* (generic equative)
c. That’s the same person as your teacher. *individuals* (identity statement)

- d. A danced as B sang. *times or manners* (verbal similative)
 e. As you know, I've had to quit my job. *propositions* (prop. similative)

Because these similative clauses are associated with a variety of different types of semantic entities – some arguments, some non-arguments – they occur in a variety of different syntactic configurations. This means that a compositional semantic account of similatives would ideally have a single denotation for similative clauses with a variety of different combinatoric strategies allowing that denotation to contribute to its various syntactic contexts. For instance, when the *as* clause is associated with a lexical argument, in particular the equative in 4a and the identity statement in 4c, a quantifier is required (*as* and *same* respectively; Rett 2013).

Only some similatives can embed clauses (cf. the generic equative in 4b, *The canvas is white as snow* (**is*)): the verbal similative in 4d and the propositional similative in 4e. And we consequently see that these are the similatives that can be formed with ‘as if’.¹ Because propositional similatives are associated with a clause, they are necessarily appositives, which will play a role in the analysis in §5.

- (5) a. A danced as B danced. *verbal similative*
 b. A danced as if she were classically trained. *verbal ‘as if’ similative*
- (6) a. She lost her job, as you know. *propositional similative*
 b. She lost her job, as if you didn’t know. *propositional ‘as if’ similative*

2.2 A productive cross-linguistic strategy

Preliminary typological surveys (see also Mizuno 2018; Martínez 2021) indicate that languages, in general, have an ‘as if’ strategy that involves a relativizer, a non-declarative subordinator, and some sort of marked mood. We will focus on the first two ingredients here, and discuss the third in §3.3.

¹ Mizuno (2020) offers an example of something that looks like an ‘as if’ equative (i.e., with an adjectival parameter). There are a few constructions that could count as such:

- (i) a. Her lips are as red as if she’d just eaten a pomegranate.
 b. Her lips are so red, as if she’d just eaten a pomegranate.

To the extent that sentences like (ia) are acceptable, they exist (we predict) by virtue of the fact that the standard clauses of specific equatives can be clauses (cf. generic equatives). Because the *as if* clause is associated with a degree argument of the adjective, we would analyze them exactly along the lines of the verbal similatives discussed in §4. But the construction in (ib) is different; it’s a sufficientive, which associates the subject with a particular property (being so red), like the generic equative in 4b. The *as if* clause in 0b is associated with this property, and since the property isn’t an argument of anything, the *as if* is an appositive, set off by comma intonation. Our analysis of this construction would thus parallel that of propositional ‘as if’ constructions discussed in §5.

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Bücking (2017) discusses German in detail; German forms ‘as if’ constructions with relativizers *als* or *wie* and subordinators *wenn* and *ob*. In Hungarian, similatives are formed with *mint* (‘as’, 7) and conditionals are formed with *ha* (‘if’, 8); ‘as if’ constructions are consequentially formed with the complex subordinator *mintha*.

- (7) A olyan magas, mint B.
A so tall, as B
‘A is as tall as B.’ *specific equative*
- (8) Ha jön-ne Mari, örül-né-k.
if come-SUBJ Mari be.happy-SUBJ-1SG
‘If Mari came, I would be happy.’ *subjunctive conditional*
- (9) a. Mari úgy táncol, mintha részeg len-ne.
Mari in.a.way dance as-if drunk be-SUBJ
‘Mary dances as if she were drunk.’ *verbal ‘as if’*
b. Abbahagyam a dohányzást, mintha nem tudnád.
quit-1SG the smoking, as-if not know-SUBJ
‘I have quit smoking, as if you didn’t know.’ *propositional ‘as if’*

There is interesting variation reported in Mizuno (2020): Japanese forms ‘as if’ constructions with the similative marker *youni* and its polar question particle *ka*.

- (10) a. Ben -wa [yotteiru ka -no youni] jitensya -ni notteiru.
Ben -TOP drunk Q -GEN as bicycle -on ride
‘Ben is cycling as if he is drunk.’

Martínez (2021) reports that many Mesoamerican languages use correlative markers (instead of similative markers, although see Rett 2020) and many Australian languages mark ‘as if’ constructions with counterfactual mood in lieu of an ‘if’.

We take these data to indicate that it’s the role of *if* as a question subordinator, not a conditional marker, that contributes compositionally to ‘as if’ constructions. This point is bolstered by the fact that conditional-marking alternatives to *if* – e.g. *unless* or *given that* – cannot be used to form ‘as if’ constructions.

2.3 Non-veridicality

‘As if’ constructions are non-veridical, which means that a construction ‘*q* as if *p*’ does not entail *p*.

- (11) She danced as if she were classically trained...

- a. ✓ of course, she is not classically trained.
- b. ✓ in fact, she is classically trained.

There is, however, a difference between verbal and propositional similatives: the latter additionally exhibit what we call ‘biased non-veridicality,’ demonstrated in 12.

- (12) She lost her job, as if you didn’t know...
- a. ✓ of course, you didn’t know, she’s very secretive.
 - b. # in fact, you did know.

This property of propositional ‘as if’ constructions has been characterized as a sarcastic “prejacent denial” by Bledin & Srinivas (2020) (see also Camp & Hawthorne 2008). We will not be able to offer a complete positive account of this fact here, but will list some important theoretical desiderata. First, because *like* and *as though* also give rise to prejacent denial when swapped for *as if* in 12, we note that it is unsatisfying to simply build prejacent denial into the (idiomatic) meaning of *as if*. Second, as shown in 12, prejacent denial is a property of all propositional ‘as if’ constructions, not just matrix ‘as if’ constructions like the one in 1c. So an empirically adequate account of prejacent denial cannot rely on encoding it in some matrix (speech-act- or illocutionary-level) operator.²

We’d also like to point out that prejacent denial cannot be attributed to high negation in ‘as if’ clauses like the one in 12, because prejacent denial persists in propositional ‘as if’ constructions regardless of whether they involve negation (13).

- (13) She lost her job, as if you care.

2.4 Mood marking

We hypothesize here that, in languages that regularly mark verbal mood, ‘as if’ clauses are marked with non-indicative mood. This is certainly true for Hungarian in 9, as well as German (Bücking 2017). But we argue that it’s also true of English, by virtue of the fact that English does not regularly mark verbal mood. English ‘as if’ constructions don’t need to involve subjunctive or ‘fake past’ verb forms (14), but nor do English counterfactual *if*-clauses (15).

² It’s also worthwhile noting that matrix ‘as if’ constructions like 1c have been associated with idiosyncratic intonation patterns: sarcasm in Camp (2012) and Camp & Hawthorne (2008) and exclamation intonation in Bledin & Srinivas (2020). But it’s entirely possible to utter matrix ‘as if’ constructions (e.g. *As if that’s a good idea*) with standard intonation, and it’s actually impossible to utter non-matrix propositional ‘as if’ constructions (like 12) with these sarcastic or exclamation intonation patterns. So prejacent denial persists in propositional ‘as if’ constructions regardless of its intonation patterns and consequently its illocutionary import.

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- (14) She is dancing as if she is / were a trained dancer.
- (15) a. If she (had) danced, she would have sang.
b. If Jane dances, she would sing.
c. If Jane is dancing, she would be singing.

So while English ‘as if’ clauses appear to allow free variation of verbal mood, there is independent evidence of covert mood-marking in English. This is consistent with the observations and claims in [von Fintel & Iatridou \(2020\)](#), who investigate the myriad ways languages have to mark non-standard verbal mood, under the umbrella of ‘X-marking’. We will thus tentatively conclude that ‘as if’ clauses are always X-marked, and discuss the implications of this claim in §3.3.

3 The three ingredients of a compositional analysis

Summarizing from above, ‘as if’ constructions are a subspecies of similative, and thus are headed by some sort of relativizer (*as* in English). They are, in particular, similatives that invoke a hypothetical standard, and as such, ‘as if’ clauses are X-marked (e.g. by the subjunctive) and marked with a non-declarative subordinator (*if* or *though* in English). To provide a semantic analysis for these constructions, therefore, we draw an account of each component from its treatment in other constructions. We note that many of these ingredients were independently brought together for the analysis of ‘as if’ constructions in [Mizuno \(2020\)](#) – albeit slightly differently – which was only recently brought to our attention.

3.1 ‘as’ as a relativizer

As discussed in §2.1, similatives are a productive strategy both within and across languages, and *as* and other similative heads can range over really any type of semantic object. As a result, semantic treatments of similatives have had to be quite flexible in both the domain of *as* and the combinatorics that are used to compose the phrases/clauses headed by *as* with the various arguments/adjuncts it associates with.

There is a widespread consensus that *as* is a relativizer, along with other similative heads like *like* and German *wie* and *als* ([Potts 2002](#); [Lee-Goldman 2012](#); [Rett 2013, 2020](#)). Adapted from [Rett \(2013\)](#), 16 characterizes the meaning of *as* as it combines with some linguistic element *P* with a free variable *x* of some type σ .

$$(16) \quad \llbracket \text{as } P \rrbracket = \lambda y. P^{[y/x]} \quad \text{for } x, y \in D_\sigma \text{ (for some type } \sigma)$$

If *as*-clauses are headless relative clauses, we expect them to exhibit a particular kind of meaning variability. In particular, we expect them to have strong, universal-like readings in some contexts and weak, existential-like ones in other contexts,

like *wh*- free relatives do (Jacobson 1995; Caponigro 2004). The sentence *She went where Roger went* means one (weak) thing in a conversation about alma maters, and another (strong) thing in a conversation about stalkers. To account for this variability, Caponigro (2004) proposes that free relatives denote properties (as in 16) that can be type-shifted to denote plural definites. We'll demonstrate this in §4.1.

3.2 'if' as a question subordinator

While perhaps canonically associated with conditionals and counterfactuals, *if* (and its crosslinguistic counterparts) actually has a wide distribution (Haiman 1978; Harman 1979): it occurs in constructions lacking conditionality (but requiring relatedness, 17a) and functions to embed *yes/no* questions (17b).

- (17) a. If you're hungry, there are biscuits in the cupboard.
b. A asked if B went to the store.

One analysis of *if* that captures these myriad uses is as an interrogative complementizer that highlights the positive answer to a *yes/no* question (Eckardt 2007; Starr 2014b).

- (18) $[[if]] = \langle \lambda p.p \vee \neg p, p \rangle$ (Starr 2014b)
 $\langle \text{content, highlight} \rangle$

Empirically, this is motivated by a number of observations (starting with Bolinger 1978) that seem to show that there is a general difference between polar questions and propositional alternative questions. English *if* differs from the English *whether* in precisely this sense (Bolinger 1978; Eckardt 2007; Starr 2014b): *if* marks polar interrogatives while *whether* marks propositional alternative questions. For example, Starr (2014b: 6) notes that the contrast in 19 disappears in 20 when *or not* is added to transform the question into an alternative question.

- (19) a. Ali is agonizing over whether Lily likes him.
b. ??Ali agonizing over if Lily likes him.
(20) a. Ali is agonizing over whether Lily likes him or not.
b. Ali agonizing over if Lily likes him or not.

This, of course, raises a number of questions about subordinators in other languages, such as German *ob* (Bücking 2017). Is it always the case that interrogative subordinators must be polar interrogatives to be used in 'as if'? This is a crucial question that is unfortunately beyond the scope of this paper.

Another way to compositionally analyze 'as if' would be to treat *if*-clauses as definites that refer to sets of possible worlds (Stone 1999; Bittner 2001; Schlenker 2004).

This would also be consistent with the general compositional picture we develop later. And, as noted by (Starr 2014b), it has much in common with the interrogative subordinator analysis. On both accounts, *if*-clauses establish a modal/propositional topic. Accordingly, we will not try to separate these analyses here.

Prominent accounts of conditionals that the analysis here is incompatible with include ones in which *if* is treated as a two-place propositional connective that itself encodes conditionality, e.g. Stalnaker (1968). Modal/restrictor accounts Kratzer (1986) may be consistent with our account, since they encode conditional meaning in dyadic modals rather than *if*. However, some modifications may be needed to capture the fact that *if* does not always serve to restrict a modal, and can form interrogative meanings. See Starr (2014b) for further discussion.

3.3 X-marking

von Fintel & Iatridou (2020) characterize X-marking as a method of marking propositions as non-open, i.e. not identical with the epistemic possibilities. The class of X-markers includes modals, subjunctive mood, tense/aspect, and inversion; it need not be true subjunctive, or truly counter-to-fact to count as X-marking (or to capture the non-veridicality needed to account for ‘as if’ constructions). In tandem with this work, some accounts of subjunctive conditionals attribute the source of the Stalnaker/Lewis similarity relation to X-marking, rather than *if* itself (Starr 2014a). We will pursue this line of analysis for ‘as if’ constructions.

The semantics of X-marking is a topic of active research and debate, so it’s not simple to take a standard theory off the shelf and apply it here. It’s not even straightforward to translate an account of subjunctive/counterfactual conditionals to a semantics of X-marking. For simplicity and familiarity, we will adopt the proposal from von Fintel (1999) that subjunctive conditionals require the most similar p -worlds to not be completely contained in epistemic possibilities C (von Fintel 1999, a.o.). While von Fintel (1999) discusses this as a presupposition of subjunctive conditionals we will, for simplicity, assign it as the at-issue content of X-marking:³

$$(21) \quad \llbracket X \rrbracket_f = \lambda p. \exists w' \in \text{Sim}_f(w, p) : w' \notin C(w)$$

We will assume the similarity selection function obeys fairly standard constraints from the literature on counterfactuals.

$$(22) \quad w' \in \text{Sim}_f(w, p) \text{ is true iff } w' \in f(w, p), \text{ where } f \text{ is contextually determined set selection function satisfying success } (f(w, p) \subseteq p), \text{ weak centering } (w \in$$

³ Further data, such as negation tests, would be required to determine whether this content is better modeled as a presupposition.

$f(w, p)$, and uniformity (if $f(w, p) \subseteq q$ and $f(w, q) \subseteq p$, then $f(w, p) = f(w, q)$). (Stalnaker 1968)

It is important to highlight that this semantics for X-marking does not say that an X-marked clause p is inconsistent with the epistemic possibilities $C(w)$. It says that *some* of the most similar p -worlds are not epistemically possible, which is consistent with there being other most similar p -worlds that are epistemically possible. This point is crucial not only for capturing that not all *if*-clauses are counterfactual in subjunctive conditionals, but also that not all ‘as if’ clauses exhibit prejacent denial.

By attributing similarity to X-marking, our analysis of ‘as if’ differs from those that attribute it to *if* (as in Bücking 2017) or an *as if* idiom (as in Bledin & Srinivas 2019). But this difference is arguably required for a compositional analysis. Since many accounts of indicative conditionals do not assign a similarity-based meaning to *if* (e.g. Kratzer 1986), it would be controversial to build it into the meaning of *if*. There are also languages whose ‘as if’ construction involve X-marking but not any *if*-like complementizer (Martínez 2021). We do wish to note that for related similative constructions involving *like* (see 2) similarity may be lexically encoded in *like* rather than X-marking, but we leave this for future research to explore.

4 Verbal similatives

Many verbs can be associated with time and manner arguments in addition to their standard event and individual arguments. For the sake of convenience, we will assume that these verbs lexicalize these arguments, but this arguably isn’t the case (Rett 2013). There are also perceptual verbs that can be associated with a perceptual sources (23a) or performance verbs that can be associated with an assumption that underlies the performance (23b). Arguably, these optional arguments are lexicalized, but we run roughshod over that distinction in what follows.

- (23) a. This {seems / looks / smells} {like / as if} it hasn’t been washed.
 b. He {acted / behaved / pretended} {like / as if} she wasn’t in the room.

4.1 A derivation for verbal similatives

A standard verbal similative is as in 24. It can receive a time (i.e., simultaneously) or a manner (e.g., softly) interpretation, depending on the context. To treat these similatives, loosely following Rett (2013) (see §3.1), we assume that similative matrix clauses denote a property corresponding to the open argument (a manner property in 24a). We also assume that *as*-clauses, qua free relatives, denote properties, but are type-shifted in this configuration to denote a plural individual (Caponigro 2004; Anderson & Morzycki 2015). This is demonstrated in 24b.

(24) A danced as B danced.

a. $\llbracket \text{A danced} \rrbracket = \lambda m \exists e [dance(a, e, m)]$

b. $\llbracket \text{as B danced} \rrbracket = \lambda m' \exists e' [dance(b, e', m')] \Rightarrow = \iota m' \exists e' [dance(b, e', m')]$

c. $= \exists e [dance(a, e, \iota m' \exists e' [dance(b, e', m')])]$

The result is a configuration in which the *as*-clause feeds into the matrix clause as an argument; after the matrix event argument undergoes existential closure in 24c, the resulting truth conditions hold iff there was an event of A dancing in the manner in which B danced. Like other free relatives, the verbal similative in 24 can be true if A danced in more than one manner that B did (e.g. gracefully and slowly). This strengthened meaning is captured by the type-shift in 24b to a plural definite; it also allows for domain restriction in case B danced in more than one manner, but A’s dancing manner only matched one of them.

The treatment works exactly the same for time arguments of verbs (with the variable *t* instead of *m*) and the perceptual-source arguments of verbs; Bledin & Srinivas (2019) have an excellent discussion of how those ‘p-source’ arguments are compositionally associated via theta roles.

4.2 A derivation for verbal ‘as if’ constructions

To extend this treatment of verbal similatives to verbal ‘as if’ constructions, we only need to incorporate the semantics of *if* and X-marking, introduced in §3.2 and §3.3 respectively. In 25a the X-marking is interpreted; the result is a subordinate clause that relates its possible-world argument to those in which she is classically trained. In 25b, the addition of *if* forms a propositional function, in keeping with its role as an interrogative complementizer. This question denotation is then down-shifted in 25c to make the positive answer to the question compositionally available.⁴

(25) A danced as if she were classically trained.

a. $\llbracket \text{she was-X trained} \rrbracket$

$= \lambda w \exists w'' \in Sim_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w)$

b. $\llbracket \text{if she was-X trained} \rrbracket$

$= \lambda p.p = \lambda w \exists w'' \in Sim_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w)$

c. $\Downarrow = \lambda w \exists w'' \in Sim_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w)$

⁴ The need for this downshifting may be a quirk of our simple implementation here. We take ‘if’ to denote $\lambda q.\lambda p.p=q$, which amounts to forming a question that consists of the positive answer. This is the best we can do to approximate the two-dimensional meaning proposed by Starr (2014b) where ‘if’ both forms a question and highlights its positive answer. In Starr (2014b), compositional semantics has access to highlights, which eliminates the need to downshift sets of propositions to compositionally access the positive answer. See Roelofsen & van Gool (2010) for similar compositional systems.

- d. $\llbracket \text{as if she were-X trained} \rrbracket$
 $= \lambda m' \lambda w \exists w'' \in \text{Sim}_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w)$
- e. $\llbracket \text{as if she were-X trained} \rrbracket$
 $\Rightarrow \iota m' \exists w'' \in \text{Sim}_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w)$
- f. $\exists e [dance(a, e, \iota m' \exists w'' \in \text{Sim}_f(w, \lambda w' \exists e' [T(a, e', m', w')]) : w'' \notin C(w), w)]$

In the next compositional step 25d, the free manner variable in *trained* is lambda bound by *as*, just as in verbal similatives. In 25e, we again follow Caponigro (2004) and Anderson & Morzycki (2015) in type-shifting this function to denote a plural manner individual, but there is a wrinkle. The iota operator requires an open proposition, and we have a proposition, so we first unbind w , a common necessity in compositional intensional systems. In the final step 25f, this plural individual saturates the manner argument of the matrix verb *dance*.

A crucial feature of our representation 25f is that the training event is not said to occur in the world of evaluation w , but instead in the world(s) being described as similar to w . This captures the non-veridicality of verbal ‘as if’ constructions, and traces it primarily to the similarity relation contributed by X-marking. This nicely extends to verbal *as though* and *like* constructions which may similarly require X-marking or lexically encode similarity. It is useful to note that the interrogative meaning of ‘if’ played no essential role in the derivation 25, but we see this as a feature and not a bug. The challenge in this domain is to have a meaning for *if* that allows it to contribute the same meaning in very different constructions (interrogatives, conditionals, ‘as if’), without requiring it for any one of them.⁵

5 Propositional similatives

Propositional similatives are constructions in which the *as*-clause consists of a subject, a verb with a propositional argument, and an object corresponding to some salient proposition p . p can either be salient by virtue of being denoted by the main clause, as in 26, or by virtue of being contextually salient (as in 27).

(26) Housing prices are too expensive, as I have said repeatedly.

(27) A: Housing prices are too expensive!

B: (Yeah,) As I have said repeatedly.

⁵ We also note that, unlike regular verbal similatives, verbal ‘as if’ constructions cannot receive a time interpretation. In other words, a sentence like *A danced as if B were dancing* cannot mean that A danced at the same time that B would be dancing if B were dancing, it can only receive a manner interpretation (i.e. that A danced in the manner she would dance if B were dancing).

There are lots of reasons to use a propositional similative, corresponding to the various roles of sentential adverbs or particles: epistemic uses (28a), evidential uses (28b), and discourse uses (as in 26).

- (28) a. As you know, I’ve had to stop consuming dairy.
 b. The siege has ended, as we have just heard.

It is possible for a similative to be associated with the propositional argument of a verb, as in 29. But we would characterize these constructions as verbal similatives, because they are associating with the argument of a verb (that just happens to be a proposition). In our way of characterizing things, propositional similatives are always associated with some salient proposition, either the main clause or a contextually provided one. This means that propositional similatives (in contrast to 29) are always appositives, as they are not slotting into any argument position.

- (29) He believe as she believes, namely that climate change is an existential threat.

5.1 A derivation for propositional similatives

Our analysis of propositional similatives, before the incorporation of comma intonation, is straightforward: in 30, the *as*-clause contains a gap corresponding to a proposition. While it’s plausible for the sentence in 30 that this gap is a trace, created by movement, that isn’t the case for matrix propositional similatives like those in 27, so we will just assume it’s a free variable.

- (30) She lost her job, as you know.
 a. $\llbracket \text{as you know } q \rrbracket = \lambda q. \lambda w. \text{know}(\text{addr}, q, w)$
 b. $\llbracket \text{she lost her job} \rrbracket = \text{lost-job}(\text{she}, w)$

Combining these two meanings by function application would yield the proposition that the addressee knows that she lost her job. But, this meaning is, in most contexts, too strong: 30 doesn’t assert that the hearer knows that *p*, this is backgrounded information. This meaning would also be too weak to capture cases with non-factive verbs, as in *She lost her job, as you heard*. Intuitively, such a sentence still commits the speaker to the proposition that she lost her job.

To address this issue we will assume that composition does not proceed by simple function application, but instead by the mechanisms posited in work on not-at-issue assertion (e.g. Murray 2014; Anderbois, Brasoveanu & Henderson 2015; Koev 2019). In particular, we assume that the appositive syntax and comma intonation in 30 marks a not-at-issue comment whose propositional argument *q* is anaphoric to the main proposition that she lost her job. The result is an assertion that she lost her

job, and a not-at-issue comment that you know that fact. Fully implementing this analysis would involve introducing a more sophisticated semantic framework. For example, on the analysis of parentheticals and appositives in Murray (2014: §3.2), appositive clauses are combined by dynamic conjunction (update sequencing) but update the context set in a different way than the main clause. They directly restrict the context set, rather than proposing their content for addition to the context set, as main clauses do. For reasons of space, we do not work out such an implementation here, but note that it would be straightforward to do so.

There is additional evidence that the backgrounded status of propositional similatives is the result of their appositive status. This backgrounded status is context-sensitive, which is what we have come to expect of all not-at-issue content (Simons, Tonhauser, Beaver & Roberts 2010). In a context in which B is an atheist – and therefore doesn’t believe that biblical edicts constitute real moral obligations – their response in 31 is felicitous and sincere. This is because the propositional similative has at-issue content, the modal statement is thus subordinated under it, and the utterance therefore doesn’t commit B to its truth.

(31) A: Why is everyone making candle wicks out of linen?

B: As it says in the Bible, stained linen should be repurposed as candle wicks.

Accordingly, we conclude that our analysis of 30 as an at-issue assertion of *she lost her job^q* and a not-at-issue assertion of *as you know q* is on the right track.

5.2 A derivation for propositional ‘as if’ constructions

Our analysis of propositional ‘as if’ constructions mirrors our analysis of propositional similatives, but adds to it the contributions of *if* and X-marking. We will spell this out for example 6b:

- (6) a. She lost her job, as you know. *propositional similative*
 b. She lost her job, as if you didn’t know. *propositional ‘as if’ similative*

Just like 6a, we assume that *you didn’t know* has an unsaturated propositional variable *q*. But 6b differs in that it is X-marked.

- (32) a. $\llbracket \text{you didn't-X know } q \rrbracket =$
 $\lambda w. \exists w'' \in \text{Sim}_f(w, \lambda w'. \neg \text{Know}(\text{addr}, w', q)) : w'' \notin C(w)$
 b. $\llbracket \text{if you didn't-X know } q \rrbracket =$
 $\lambda p. p = \lambda w. \exists w'' \in \text{Sim}_f(w, \lambda w'. \neg \text{Know}(\text{addr}, w', q)) : w'' \notin C(w)$
 c. $\Downarrow \lambda w. \exists w'' \in \text{Sim}_f(w, \lambda w'. \neg \text{Know}(\text{addr}, w', q)) : w'' \notin C(w)$
 d. $\llbracket \text{as if you didn't-X know } q \rrbracket =$
 $\lambda q. \lambda w. \exists w'' \in \text{Sim}_f(w, \lambda w'. \neg \text{Know}(\text{addr}, w', q)) : w'' \notin C(w)$

Once again, *if* creates a set of propositions, and we then lower the type of 32b in step 32c to access the highlighted proposition (see note 4). The significant difference from 1 here is that there is no manner variable for *as* to bind. But, there is a propositional variable *q*. In keeping with its role as an all-purpose relativizer, *as* binds *q*.

As with 6a, we cannot provide a full representation of the meaning of 6b without adding an analysis of not-at-issue meaning. However, the implementation sketch we provided for 6a applies equally well to 6b. Note that, crucially, the representation for *as if you didn’t know q* in 32d captures the anti-veridicality of the construction. After the variable *q* is anaphorically saturated with the main clause proposition, and the variable *w* is resolved to the world of evaluation, this representation does not say that the addressee hasn’t heard *q* in the world of evaluation. Instead, it says that the addressee hasn’t heard *q* in the worlds most similar to *w*, and that those worlds are not completely contained in the epistemic possibilities in *w*. Again, crucially, we envision an analysis where this proposition is a not-at-issue restriction of the context set while the main clause proposes to add its content to the context set.

We mentioned in §2.3 that propositional (but not verbal) ‘as if’ constructions give rise to prejacent denial, so that an utterance of 6b has the implication that the addressee *does* know that she lost her job. We argued that this can’t be explained by appealing to idioms, high-negation, or intonation. It seems plausible to us that this semantic difference is correlated with a different one: propositional ‘as if’ clauses are a reaction to, or comment on, a common ground proposition, but verbal ones are not. If this difference can be used as a basis for explaining prejacent denial, it would also nicely capture the fact that matrix ‘as if’ constructions like 1c also intuitively react to a salient fact, and also give rise to prejacent denial.

For matrix ‘as if’ constructions like 1c, we predict that they are just like non-matrix propositional ‘as if’ constructions, but their relationship to a salient proposition is more tenuous. And when it does happen that matrix ‘as if’ constructions have a mirative interpretation, reflecting the speaker’s surprise, we believe it is more accurately attributed to exclamation intonation – an L+H* pitch accent, extra and extra-high targets, signified by the exclamation point – which we independently know marks mirativity in English (Rett & Sturman 2021). However, as noted in footnote 2, matrix ‘as if’ constructions don’t need to be pronounced with exclamation intonation, and when they aren’t, they carry no sense of exclamation or mirativity. 5.2 provides several examples.

- (33) a. As if you didn’t know.
 b. As if you hadn’t been eavesdropping.

Accordingly, we tentatively suggest that the analysis provided here holds promise as a general approach to all ‘as if’ constructions, across constructions and languages.

6 Conclusions and extensions

We have proposed that ‘as if’ constructions are a compositional subspecies of similatives (those whose similative component can be clausal). Verbal ‘as if’ constructions associate with a verbal argument, and propositional ‘as if’ constructions associate with some salient (non-argument) proposition. In our account, the equation or assimilation component of the similative comes about by normal combinatorics (i.e. relativization or anaphora), as it does in Rett (2013, 2020). But ‘as if’ constructions differ from other similatives in invoking hypothetical standards of comparison. We derive this non-veridicality from X-marking, which (if a complementizer is required) is only compatible with a non-declarative complementizer like *if*.

Unlike other accounts (with the possible exception of Mizuno 2018, 2020), we make strong predictions about whether and how ‘as if’ constructions are formed cross-linguistically. We predict that ‘as if’ constructions are possible in languages that have productive (clause-embedding) similative strategies. We predict that ‘as if’ constructions, in addition to being marked by a similative-specific relativizer, will crucially involve X-marking (in languages that systematically mark it), and (when a subordinator is required) a non-declarative subordinator, such as a question complementizer or a conditionalizer. And we predict that matrix ‘as if’ constructions can only be formed from propositional ‘as if’ similatives, but need not be pronounced with any marked intonation pattern (nor with any mirative marker, in languages that encode mirativity lexically).

There are several outstanding issues that we hope to return to in future work. We have failed to provide an explanation of why verbal ‘as if’ constructions (in contrast to regular verbal similatives) cannot receive a temporal interpretation. We have not provided a substantive survey of cross-linguistic variation, despite making strong predictions about it. And perhaps most importantly, we have not provided an explanation here for the observation that propositional ‘as if’ constructions, but not verbal ones, involve what we’ve called “prejacent denial,” an implication that $\neg q$ (for a construction ‘as if q ’). In the absence of a satisfactory positive proposal, we have noted that (in some cases in contrast to extant accounts) this difference cannot be attributed to some idiomatic or lexicalized meaning; to a matrix/embedded distinction; or to a different intonational pattern or illocutionary mood.

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