Supplements without Bidimensionalism[*]

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Abstract. In seminal work, Potts 2005 claimed that the behavior of 'supplements' – appositive relative clauses (ARCs) and nominals – offers a powerful argument in favor of a multidimensional semantics, one in which certain expressions fail to interact scopally with various operators because their meaning is located in a new semantic dimension. Focusing on ARCs, with data from English, French and German (Poschmann 2018), we explore an alternative to Potts's bidimensional account in which (i) appositives may be syntactically attached with matrix scope, despite their appearance in embedded positions, as in McCawley 1981; (ii) *contra* McCawley, they may also be syntactically attached within the scope of other operators, in which case they semantically interact with them; (iii) they are semantically conjoined with the rest of the sentence, but (iv) they give rise to non-trivial projection facts when they do not have matrix scope. In effect, our analysis accounts for most of the complexity of these data by positing a more articulated syntax and pragmatics, while eschewing the use of a new dimension of meaning.

Keywords: supplements, appositives, non-restrictive relative clauses, bidimensionalism, parentheticals

1 Introduction

1.1 Goals

In seminal work, Potts 2005, 2007 argued that supplements, the semantic contributions of appositive relative clauses (henceforth ARCs[1]), motivate the postulation of a new dimension of meaning, the Conventional Implicature dimension.[2] We propose an alternative in which the peculiar behavior of ARCs is not due to their semantics, but to their syntax and to their pragmatics.

The contrast between (1)a and (1)b suggests that ARCs are 'scopeless', in the sense that they do not interact semantically with operators in whose scope they appear. Thus the underlined ARC in (1)a is somehow read outside the scope of negation, unlike the underlined conjunct in (1)b:

(1)   a. I doubt that Sam, <u>who is smart</u>, is competent.   => Sam is smart

      b. I doubt that Sam <u>is smart</u> and competent.   ≠> Sam is smart

This behavior was taken by Potts 2005 and Nouwen 2007 to argue for a *bidimensional semantics*, one in which supplements are computed in a separate semantic dimension from assertive content. Their analysis is sketched in (2).[3] Original debates took nominal appositives to share the behavior of ARCs, but recent research suggests that nominal

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[1] When citing other works, we write *[ARC]s* is they use a different terminology.

[2] Expressives provided another argument for this dimension, but they have given rise to a different debate; see for instance Potts 2007 and responses in the same volume.

[3] As noted by Emonds 1979, the hypothesis that ARCs are attached to their nominal associate has a long history, e.g. Smith 1964, Kuroda 1968, Jackendoff 1977; see also the more recent studies by de Vries (2006) and Koev (2013).

appositives have 'corrective' readings that cloud the main issues, and thus we leave them out of the present discussion (see e.g. Sæbø 2011, AnderBois et al. 2013, Nouwen 2014, Ott and Onea 2015 Schlenker 2010, 2013, García-Núñez 2021).

(2) **Bidimensional Analysis (**Potts 2005; Nouwen 2007)

    (i) Syntax: Appositives are attached in their surface position, i.e. they are attached to their DP associate.

    (ii) Semantics: Supplements are computed in a separate dimension, which has two effects.

    A. They appear to have 'wide scope'.

    Version 1 (Potts 2005): They do not interact scopally with other operators.

    Version 2 (Nouwen 2007): They only interact scopally with operators *to the extent that unembedded E-type pronouns do*.

    B. Supplements have a special epistemic status (they are not 'at issue').

We develop an alternative that does without Potts's additional dimension (there might be independent reasons to posit more than an at-issue dimension; our point is that supplements on their own do not necessitate an additional dimension). On a syntactic level, we adopt a liberalized version of McCawley's analysis (1981, 1998): ARCs may in principle be attached to the root node even when their DP associate is embedded (= McCawley's claim), but in addition they may, with various levels of difficulty, be attached to any propositional node that dominates their DP associate (= our liberalization; the preference for matrix attachment will be seen throughout this piece in acceptability ratings). On a semantic level, ARCs are conjoined to the propositional node they attach to, and they may thus interact with at-issue contributions; in particular, they may also take scope under operators if they are attached lower than them. On a

pragmatic level, we assume that supplements must make a non-trivial semantic contribution (as argued by Potts 2005, who distinguished them from presuppositions), but that their content should be in a sense easy to accommodate. This predicts weakened projection patterns reminiscent of presuppositions. These assumptions appear in (3).

(3) **Unidimensional Analysis** (related ideas in Schlenker 2010, 2013)

    (i) Syntax (liberalized version of McCawley 1981, 1998; see also Del Gobbo 2003)

    -An ARC can be attached to any node of propositional type that dominates the position of its DP associate.

    -Preferences:[4] matrix attachment >> lower attachment

    (ii) Semantics (Del Gobbo 2003)

    a. In an ARC, the relative pronoun can be interpreted as E-type or as referential.

    b. An ARC is interpreted conjunctively.

    (iii) Pragmatics

    a. Relative to its local context, an ARC should be non-trivial (Potts 2005).

    b. It should be 'easy' to add to the global context assumptions that make the ARC locally trivial.

We provide three main arguments in favor of our approach.

(i) *Bidimensionalism is undesirable* because there are cases in which appositives can be attached *and interpreted* in the scope of other operators.

(ii) *Bidimensionalism is unnecessary* because there are independent (syntactic)

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[4] Among lower attachments, we conjecture that attachment under an attitude verb is easier than attachment under other operators, but we have no hard data on this point.

arguments for postulating that appositives may, like parentheticals, be attached much higher than their surface position would lead one to expect.

(iii) *Some supplements give rise to patterns of projection reminiscent of presupposition projection*. This suggests that there is a non-trivial interaction between the semantic contributions of some appositives and that of other operators.

Besides English, our discussion uses data from French because it has some moods (such as the subjunctive) which yield ungrammaticality unless they have narrow scope relative to some operators. We will also make reference to German data investigated with experimental means by Poschmann 2018; and we will provide independent evidence for our mechanism of liberal attachment to various propositional nodes from a rather different construction in ASL (American Sign Language).

1.2   Liberalizing McCawley's analysis

McCawley 1981, 1998 assumed that ARCs are always attached at the matrix level – and in fact accomplish "a separate speech act".[5] As a result, the truth-conditional predictions were identical to those of Potts's (far more recent) theory. McCawley was not alone in this 'matrix level' assumption. Ross 1967 proposed that ARCs originate (and are interpreted) as separate matrix clauses, and are subsequently adjoined to the nominal they modify.[6] Emonds 1979 posited the same type of source structure but derived the

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[5] Note, however, that McCawley 1981 (fn. 10) treated 'continuative' relative clauses as in (i) as a variant of conjoined sentences, hence not 'genuine' ARCs.

(i) He gave the letter to the clerk, who then copied it. (Jespersen 1924)

[6] See Ross's discussion of his (6.158) and (6.160).

surface form in a different way, employing a rule that also applied to parentheticals.[7]

A key component of our proposal lies in a liberalization of McCawley's analysis: while ARCs are preferably attached at the matrix level, they can also be forced (by grammatical or by contextual means) to be attached to any propositional node that dominates their DP associate. This arguably simplifies McCawley's analysis, as it removes one stipulation from it (why should only matrix attachment be possible?). But this will also make entirely different truth-conditional predictions than Potts's analysis, as our proposal predicts that ARCs may in some cases interact scopally with operators.

1.3   Scope or pseudo-scope? Potts 2005, 2007 and Nouwen 2007

One issue should be clarified at the outset: what counts as scopal interaction? The frameworks developed by Potts (2005, 2007) and Nouwen (2007) are designed to capture the generalization that *appositives never have genuinely narrow scope with respect to other operators*. We write 'genuinely' because it is clear for both authors that whatever mechanisms allow expressions to be intuitively dependent on some operators without being in their syntactic scope should in principle be available for appositives as well. There are three cases in point.

(i) Nouwen 2007 observes that the nominal appositive in (4)a(i) is semantically dependent on the indefinite *a Dutch boxer*; and the same observation holds of the ARC in (4)a(ii). But by itself this observation does not invalidate the main insight of the bidimensional approach: the same phenomenon arises in (4)b, where *he* is intuitively dependent on the indefinite. By contrast, neither dependency is possible when the indefinite is replaced with a universal quantifier, as in (4)c,d.

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[7] See for instance Kim 2019 for a recent analysis of modifiers, including ARCs.

(4) a. A Dutch boxer, (i) a famous one, (ii) who is famous, took part in the event.

b. A Dutch boxer took part in the event. He is famous.

c. #Every Dutch boxer, (i) a famous one, (ii) who is famous, took part in the

event.

d. #Every Dutch boxer took part in the event. He is famous. (See Nouwen 2007)

The natural conclusion is that some mechanism allows a singular pronoun to be dependent on an indefinite (but not on a universal quantifier) without being in it syntactic scope; whatever this mechanism is, it probably applies in identical fashion to (4)a and (4)b. Nouwen's system is designed to capture this generalization by allowing variables in an appositive to be dynamically bound by an existential quantifier that appears outside of it.

(ii) Potts 2005 observes that there are apparent exceptions to the claim that appositives are interpreted outside the scope of operators, for instance German ARCs in the 'Konjunktiv I', a subjunctive specialized for indirect discourse.

(5) Juan   behauptet,   dass Maria, die sehr schwach sei, krank sei.
    Juan   maintains   that   Maria who   very   weak   be.konj. sick be.konj.
    'Juan maintains that Maria, who is supposed to be really weak, is sick.' (Potts 2005)

In this case, the ARC is interpreted from the agent's rather than from the speaker's perspective: the claim that *Maria is sick* is naturally attributed to Juan, not to the speaker. But as Potts rightly observes, this does not show that the ARC must scopally interact with the attitude operator. As he writes, "when one studies the distribution of Konjunktiv I more broadly, one finds that it can occur in main clauses provided that the context includes an agent to whom the content of the clause can be relativized"; e.g. the second sentence in (6) depends on the attitude operator without scopally interacting

with it.

(6) Juan   behauptet, dass Maria krank sei.   Sie   sei   sehr schwach.

Juan   maintains that Maria sick   be.konj She   be.konj very   weak

'Juan maintains that Maria is sick. According to him, she is very weak.'

(iii) This line of reasoning is extended by Harris and Potts 2009a,b to English examples in which an appositive appears to interact scopally with an attitude verb, as in (7)a.

(7) My brother Sid hates school.

a. He says that he puts off his homework, a complete waste of time, to the last minute.

b. He puts off his homework, a complete waste of time, to the last minute.

They show with experimental means that in examples such as (7)a, the appositive can be interpreted from the agent's rather than from the speaker's perspective; but they also show that the same phenomenon arises in the absence of any attitude operator, as in (7)b, where it can be understood that it is Sid's opinion (rather than the speaker's) that homework is a complete waste of time. Harris and Potts conclude that an operation of 'perspectival shift', which crucially does *not* require genuine scopal interaction, is responsible for the data in (7)b, and presumably for (7)a as well.

Following the same logic (with clearly unembedded controls), but with opposite results, we will show that in several cases ARCs genuinely take narrow and intermediate scope relative to various operators.

1.4 *Data elicitation*

Our data are based on traditional elicitation methods, with introspective judgments by native speakers, in this case linguists[8]. But because some of the data are subtle and/or

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[8] Two of our French consultants only have a partial background in linguistics.

give rise to variation, we conducted three surveys: two on American English, one on French (with 8 respondents per survey). Two kinds of judgments were collected: acceptability, on a 7-point scale (with 1 = worst, 7 = best); and inferential strength, also on a 7-point scale (with 1 = no inference, 7 = strongest inference). The full survey and the raw data can be found in the Supplementary Materials.

There are two reasons for our survey-based investigation with linguists. First, there are way too many data points to conduct an experiment at this early stage (investigating a subset of the data in German required considerable work and experimental know-how on Poschmann's part, see Section 3). Second, acceptability contrasts and inferential judgments are complex and subtle, and thus best investigated with specialists in an initial stage (for the general validity of introspective methods used in linguistics, see for instance Sprouse and Almeida, 2012, 2013 and Sprouse et al. 2013). Very careful experimental investigations would be useful at a later stage.

1.5 Structure

The rest of this article is organized as follows. We display evidence for narrow scope readings in English, French and German in Section 2-3. Evidence for high syntactic attachment in English and French is reviewed in Section 4, while cases of intermediate scope are discussed in Section 5. In Section 6, we review evidence from ASL for a mechanism of non-local attachment of clauses that dovetails with the present proposal. We then turn to the pragmatics in Sections 7-8, establishing that narrow scope ARCs give rise to patterns of 'supplement projection', and comparing the epistemic status of supplements to that of informative presuppositions. We conclude in Section 9. (We compare our analysis to AnderBois et al.'s (2013) important proposal in Appendix IV.)

2   The possibility of narrow scope I: English and French

We will now display several cases across languages in which some ARCs genuinely give rise to scopal interactions. The logic is as follows: (a) an ARC with a certain property P behaves semantically as if it takes narrow scope under some operators; while (b) a clausal parenthetical that serves as a control (with the same property P) is either unacceptable, or acceptable but with a different interpretation. The data will be explained by positing that the clausal parenthetical can only have matrix scope while the ARC can get narrow scope. We only provide an existence proof that in diverse constructions, narrow scope is possible (this proviso matters because there is a general preference for high attachment, and differences in embedding possibilities across constructions are still ill-understood).[9]

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[9] Two remarks should be made about the literature.

1. Sæbø 2011 provides independent arguments for narrow scope interpretations of appositives based on embedding under 'surprise'. Most of his examples involve nominal appositives, but they can arguably be replicated with ARCs (see also Sæbø's fn. 1). Following the discussion of Schlenker 2021a, we include in (i) a modified version of Sæbø's example (18), and in (ii) a version with an ARC, as well as a control with a clausal parenthetical. A potential worry is that the ARC in (ii)a might not be as different as one might hope from the parenthetical control in (ii)b, which presumably does not involve genuine scopal interaction. This is one of our motivations for investigating constructions in which parenthetical controls are degraded for grammatical reasons.

(i) In John 4 Jesus spoke with a Samaritan woman and asked for a drink. She had two things against her: she was a woman, and a Samaritan.

2.1 Modally interpreted tense under if

We start with English data involving the modally interpreted past tense.[10] This phenomenon arises within the scope of *if*-clauses but not in unembedded environments. It makes it possible to force appositives to have narrow scope relative to an *if*-clause.

Consider the paradigms in (8):

(8) *Context:* someone made a big mistake at the Department.

If tomorrow I called the Chair _____ then we would be in big trouble.

a. John was surprised that Jesus, a Jewish man, spoke to Ruth, a Samaritan woman.

b. John was surprised that Jesus, a Jew, spoke to Ruth, a Samaritan.

c. John was surprised that Jesus, a man, spoke to Ruth, a woman.

(ii) a. John was surprised that Jesus, who was a Jewish man, spoke to Ruth, who was a Samaritan woman.

b. John was surprised that Jesus (he was a Jewish man) spoke to Ruth (she was a Samaritan woman).

2. Wang et al. 2005 argue that nominal appositives can take narrow scope relative to a variety of operators including attitude ones, as in (iii), but that ARCs cannot, as in (iv). We display below numerous cases in which ARCs can in fact take narrow scope.

(iii) a. Mary wants to marry an Italian, a rich one.

b. John believes that a professor, a quite famous one, published a new book.

(iv) a. Mary wants to marry an Italian, who is a rich one.

b. John believes that a professor, who is a quite famous one, published a new book.

[10] On the modal past, see Iatridou 2000, Ippolito 2003 Schlenker 2004, Schulz 2014.

Target inference: if tomorrow I called the Chair, the Chair would call the Dean.

Construction filling ___(survey A, 8 consultants)	Acceptability	Inferential strength
a. , who in turn called the Dean,	6.6	3.8
b. (he in turn called the Dean),	1.9	3.4
c. and he in turn called the Dean,	6.9	2.5
d. , who would in turn call the Dean,	7.0	6.9
e. (he would in turn call the Dean),	6.3	7.0

We argue in three steps to show that the ARC in (8)a is genuinely embedded.

(i) Unlike the parenthetical in (8)b, the ARC in (8)a is acceptable. This can be explained as follows: the modal interpretation of the past tense requires embedding under *if,* the parenthetical cannot be embedded, but the ARC can be. In principle, the parenthetical could allow for a temporal interpretation of the past tense, but this is blocked by *in turn*, which puts the speaker's calling the Chair after the Chair's calling the Dean.

(ii) Intuitively, the truth conditions of (8)a are close to an embedded conjunction: *if tomorrow I called the Chair and he called the Dean, then we would be in deep trouble* (this is not directly addressed by our survey, but we take this point to be fairly clear).

(iii) The *would*-parenthetical in (8)e (as well as the *would*-appositive in (8)d) is acceptable, but it yields a modal subordination reading, hence an inference that *if tomorrow I called the Chair, the Chair would call the Dean*.

We note that (8)a yields an intermediate result relative to this target inference: endorsement is less strong than in (8)d,e, but stronger than in (8)c. This will be explained in Section 7 as a case of weak projection reminiscent of presuppositions.

The paradigm in (9) displays related contrasts and can be analyzed similarly.

(9) *Context:* A news channel has information about the identity of an American spy in Pakistan, Smith. The following is uttered by a journalist working for that channel:

If tomorrow we published information about Smith ___ we could kiss our jobs

goodbye.

Target inference: if tomorrow we published information about Smith, Smith

would get killed as a result.

Construction filling ___ (survey A, 8 consultants)	Acceptability	Inferential strength
a. , who got killed as a result,	6.3	4.0
b. (he got killed as a result),	2.0	3.3
c. and he got killed as a result,	7.0	2.6
d. , who would get killed as a result,	6.8	6.8
e. (he would get killed as a result),	6.0	7.0

The same argument can be constructed with a present tense referring to a future

event in the scope of a conditional, as in (10). The logic is the same as for the modally

interpreted past tense, but the contrasts are less sharp, possibly due to 'futurate' readings

(e.g. Copley 2008) for the present tense in the parenthetical controls:

(10) *Context:* someone made a big mistake at the Department.

If tomorrow I call the Chair _____ then we will be in big trouble.

Target inference: if tomorrow I call the Chair, the Chair will call the Dean.

Construction filling ___ (survey A, 8 consultants)	Acceptability	Inferential strength
a. , who in turn calls the Dean,	7.0	3.5
b. (he in turn calls the Dean),	3.8	3.9
c. and he in turn calls the Dean,	7.0	2.6
d. , who will in turn call the Dean,	6.6	6.8
e. (he will in turn call the Dean),	5.8	6.9

2.2 *Past under future*

A similar logic can be applied, as in (11), to past tenses interpreted with a forward

shifted reading in the scope of a future tense. This builds on a peculiarity of the future,

which can shift the point of evaluation of tenses in its scope (Abusch 1997, Heim 1994).

(11) I will be wondering next Wednesday whether DSK ____ agreed to a settlement.

Target inference: DSK will meet with the judge next Tuesday

Construction filling ___ (survey B, 8 consultants)	Acceptability	Inferential strength
a. , who met with the judge the day before,	5.4	5.8
b. (he met with the judge the day before)	4.0	5.6
c. (he will have met with the judge the day before)	6.8	6.8
d. met with the judge the day before and	7.0	1.3

There are two main observations. First, the appositive with a forward shifted past tense in (11)a is relatively acceptable, and on average more so than the parenthetical in (11)b. Still, the latter has an intermediate level of acceptability, possibly due to a mechanism akin to Harris and Potts's 'perspectival shift'. Second, the full parenthetical with a future perfect ('will have met') in (11)c is acceptable, but it seems to be interpreted outside the scope of the attitude verb, hence an inference that DSK will in fact meet with the judge next Tuesday. In this respect, the appositive in (11)a yields a slightly weaker endorsement of the factual inference than (11)c. This too will be explained by way of a mechanism of 'supplement projection' in Section 7.

2.3   *Summary of the French data*

Related contrasts can be replicated in French, but in a weakened form because some of our consultants mostly disallow narrow scope ARCs. Specifically, if we give consultants an 'embedding score' based on the average acceptability of appositives in our three most simple tests (one involving the subjunctive, two the modally interpreted past tense), scores range between 7 and 1.7. Despite this variation, contrasts are obtained, but with lower acceptability scores for narrow scope appositives than in English. Here we just summarize the main results (see Appendix I for further details).

English paradigms with a modally interpreted past tense can be replicated using the French imperfect. Our clearest paradigm appears in (12), but as shown by the distribution of acceptability scores for (12)a, as seen in (13), there is a rather clear split between 5 consultants that accept and 3 consultants that reject this sentence.[11]   There

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[11] As can be seen in the raw data, for all 8 consultants, (12)a was preferred over (12)b, and the 5 consultants that accepted (12)a displayed at least a 5-point difference in their

is a small difference between (12) and our English paradigm regarding inferential judgments, as *both* the narrow scope appositive in (12)a and the conjunctive control in (12)c fail to yield an endorsement of the target inference (in our English paradigms, endorsement is a bit stronger for the narrow scope appositive than for the conjunctive control).

(12) *Context:* Someone made a grave mistake within our Department.

   Si demain j'appelais le   Directeur _____ , nous aurions un sacré problème.

   if tomorrow I called the-masc Director-masc ___ , we would-have a serious problem.

   'If tomorrow I called the Director ___ , we would have a serious problem.'

   Target inference: if tomorrow I called the Director, he would then call the

   Dean.

Construction filling ___(survey, 8 consultants)	Acceptability	Inferential strength
a. , qui appelait ensuite la Doyenne, *, who called then the Dean-fem,*	5.3	2.9
b. (il appelait ensuite la Doyenne), *(he called then the Dean-fem),*	1.4	2.0
c. et qu'il appelait ensuite la Doyenne, *and that he called then the Dean-fem,*	7.0	2.1
d. , qui appellerait ensuite la Doyenne, *, who would-call then the Dean-fem,*	7.0	6.0
e. (il appellerait ensuite la Doyenne), *(he would-call then the Dean-fem),*	6.0	6.5

(13) Distribution of acceptability scores for (12)a
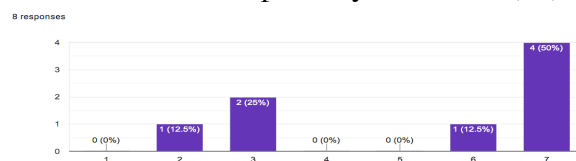
A second test is afforded by the subjunctive, a mood that is unacceptable unless licensed by an operator. While acceptability of the narrow scope subjunctive ARC's varies across the 8 consultants, 4-5 of them accepted them, while for all consultants

judgment of (12)a and (12)b.

parenthetical controls were rather sharply degraded. (A third possible test involves a French counterpart of the past under future cases discussed for English in Section 2.2, but it is not investigated in this piece.)

2.4 The role of discourse relations

As noted at the outset, we solely provide an existence proof that narrow scope is sometimes possible. Besides the general preference for matrix attachment, the possibility of narrow scope (and/or at-issue readings) seems to be constrained by the discourse relation that connects the ARC to its propositional antecedent (Holler 2005, 2008, Poschmann 2018, Jasinskaja and Poschmann 2018, Koev 2018; see also Loock 2010 and Ott and Onea 2015). An earlier version of the present work (2013)[12] proposed that ARCs do not by themselves have a conjunctive semantics, but must be connected to their propositional antecedent by "a discourse relation which is either explicit in the [ARC], or is provided by the context". It was further speculated that "matrix attachment involves whatever implicit discourse relations are available for parataxis in discourse, while implicit discourse relations for embedded [ARC]s are more constrained". Specifically, within Lascarides and Asher's (1991) typology, "the relations of Narration and Result seem to be readily available for embedded [ARC]s; in both cases, the content of the [ARC] is presented as being a consequence of the content of the [ARC]. The relation of Background is somewhat less available, and the relations Elaboration and Explanation appear to be still less available". Poschmann 2018 illustrates the contrast

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[12] Available on Semantics Archive (February 12, 2013): https://www.semanticsarchive.net/Archive/jgwMjNmM/Supplements_without_Bidimensionalism.pdf

between Narration and Explanation in (14).[13]

(14) a. If Peter called the Dean, who then called the Chair, I would be in deep trouble.

(NARRATION)

b. *If Peter called the Dean, who hated me, I would be in deep trouble.

(EXPLANATION)

Jasinskaja and Poschmann 2018 confirm these generalizations (building on Poschmann 2018). They note that the distinction between discourse relations that do and do not support embedded ARCs "corresponds to another fundamental division in discourse structure—that between coordinating (Narration, Result, Parallel, Contrast) and subordinating coherence relations (Elaboration, Explanation) in the sense of Asher and Vieu 2005". They argue that Elaboration and Explanation are unavailable for embedded ARCs because they "accompany a relation that operates at the speech act level".

In other words, our existence proof that ARCs can be attached with narrow scope must be complemented with a study of *why* narrow scope is still restricted. Jasinskaja and Poschmann 2018 have started to offer an answer to this very question.

3   The possibility of narrow scope II: German (Poschmann 2018)

 In our English and French data, we used tense or mood to force some ARCs to take

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[13] Koev 2018 (examples (85)b,c) uses NPI licensing as a test of embedding within an *if*-clause, with the contrast between (i) (Elaboration) and (ii) (possibly, Background).

(i) If I call the Chair, who calls anyone from the Dean's office, then we'll be off the hook.

(ii) *If we call John, who knows anyone from the Dean's office, then we'll be off the hook.

narrow scope with respect to various operators. Poschmann 2018 argues with experimental means that even without these grammatical devices (which have no clear counterparts in German), narrow scope readings of ARCs can be detected in German. Her strategy was to set up a story that was inconsistent with the assertion of the content of the ARC, while being consistent with its *possibility*, as in (15) (= Poschmann's translation of the German): the underlined component makes it impossible to assert that Dr. Meier has or gives the appropriate antidote, although it leaves open that he might.

(15) Gerd got bitten by a snake. There is only little chance that he will survive. The venom is quite deadly. His only chance is to reach Dr. Meier in time, who lives close by. But it's quite unlikely that Dr. Meier has got the antidote Gerd needs.

Only if Dr Meier gives him the antidote in time can Gerd be saved.

The subjects had to imagine a scenario in which pupils were asked to accurately summarize the information given by a story, and judge whether certain sentences were "appropriate as part of the summary". The target sentences appear in (16). As in our earlier discussions, they involve target ARCs, and two kinds of controls: conjunctions (which should only have narrow scope), and parentheticals (which are expected to only have wide scope). But in addition, they come in two varieties, one involving an eventive construction connected to the discourse by relations of NARRATION or RESULT, and the other a stative construction connected by the relations of EXPLANATION or BACKGROUND; as noted in Section 2.4, only the former facilitate narrow scope.

(16) Wenn Gerd rechtzeitig Dr. Meier erreicht _____ kann Gerd gerettet werden.

If Gerd reaches Dr. Meier in time _____ Gerd can be saved.[14]

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[14] We follow Poschmann 2018 in giving translations rather than glosses.

Construction filling ___	Construction type
a. , der ihm das passende Gegengift verabreicht, *, who gives him the right antidote,*	ARC/event
b. und der ihm das passende Gegengift verabreicht, *and he gives him the right antidote,*	and/event
c. (der verabreicht ihm das passende Gegengift), *(he gives him the right antidote)*	parenthetical/event
d. , der über das passende Gegengift verfügt, *, who has got the right antidote available,*	ARC/state
e. und der über das passende Gegengift verfügt, *and he has got the right antidote available,*	and/state
f. (der verfügt über das passende Gegengift), (he has got the right antidote available),	parenthetical/state

Poschmann's acceptability results (ok vs. out) appear in (17).

(17) Results of Experiment 1 in Poschmann 2018
    (with NRC = non-restrictive relative clauses, i.e. ARC)
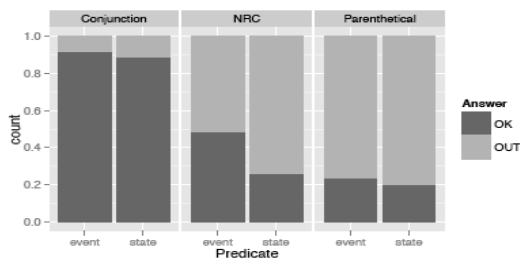
Poschmann concludes that "the results confirm the observation made by Schlenker (…) that [ARC]s, contrary to standard assumptions, can indeed get embedded interpretations, at least if they are of event predicate type", while parentheticals are significantly worse. She proposes that ARCs' lower acceptance than conjunctions might be due to the former's ambiguity (narrow vs. wide scope). While not at floor, parentheticals are still below event-related ARCs, as expected. In a follow-up experiment, she shows that that when parentheticals are replaced with postposed matrix clauses, these resist an embedded interpretation, with acceptance rates near floor.

We conclude that semantic/discourse coherence can be used to force some ARCs to take narrow scope, even without the grammatical devices we used in English and French. Furthermore, Poschmann achieved this result with experimental means. Finally, this result confirms the role of (coordinating) discourse relations in allowing

for some narrow scope ARCs, a point refined in Jasinskaja and Poschmann 2018.

4   The possibility of wide scope: English and French

At this point, we have found several cases in English, French and German in which ARCs take narrow scope, and minimally differ from clausal parentheticals, which take matrix scope. Still, there are numerous cases in which ARCs also take matrix scope, and in fact we had to use a combination of grammatical and contextual cues to bring out narrow scope readings (in addition, some consultants in French only allowed for such matrix readings). How should matrix readings be analyzed? There are two options.

Option 1. We could adopt a liberalized version of the Potts/Nouwen framework in which supplements can either be part of the at-issue dimension (hence narrow scope), or of Potts's CI (= conventional implicature) dimension, in which case they have wide scope.

Option 2. Alternatively, one could do without a CI dimension, and posit a syntactic mechanism to handle the wide scope data.

There are three main arguments against Option 1. First, there might be independent *syntactic* reasons to posit that ARCs can be attached high despite appearing to be low; they are based on the analysis of ellipsis and will be discussed in this section. Second, in some cases, narrow scope ARCs retain a special pragmatic status that is neither that of narrow scope conjunctions nor that of wide scope parentheticals with modal subordination: in (8)a, (9)a, (10)a, the narrow scope ARCs gave rise to an intermediate endorsement that will be captured in terms of 'supplement projection' in Section 7.   This means that a simple ambiguity between a CI and a non-CI reading won't be enough: for (some) non-CI readings, we would still have to explain their non-at-issue discourse status. Third, we will discuss in the next section ARCs that have

neither matrix nor narrow scope, but rather intermediate scope: a mechanism must guarantee that they can attach at a variety of scope sites, as announced in (3)a(i) (= "an ARC can be attached to any node of propositional type that dominates the position of its DP associate").

We now set out to develop Option 2 by arguing for a syntactic theory that allows for a variety of scope attachments; it is a liberalized version of McCawley's analysis.

4.1 Ellipsis and McCawley's Analysis

McCawley 1981, 1998 proposed that English ARCs must be attached at the matrix level despite being apparently embedded. His proposal is illustrated in (18), which gives rise to a discontinuous constituent *sold a violin to Itzhak Perlman* (McCawley's analysis countenanced ternary branching for ditransitive verbs, but this is immaterial to our concerns). While McCawley took high attachment to be the only possibility, in view of the foregoing discussion further attachment possibilities must be added.

(18)
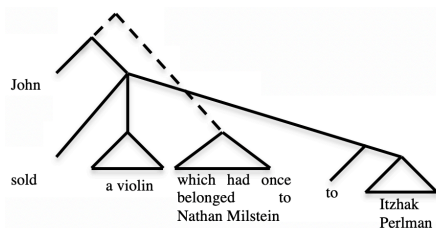
McCawley's argument for positing such a structure was based on patterns of inference obtained in ellipsis resolution, as illustrated in (19).

(19)   a. John sold a violin, which had once belonged to Nathan Milstein, to Itzhak

   Perlman, and Mary did too. (McCawley 1998)

   b. Sam bought a pound of gold, which he expects to sell at a big profit, and so

   did Fred. (McCawley 1981)

   c. Tom sent Willie Nelson, who he admires deeply, a fan letter, and Bert did

too. (McCawley 1981)

McCawley observed that the elided clause of (19)a does not imply that the violin that Mary sold to Perlman had once belonged to Nathan Milstein (analogous observations hold for (19)b,c). His argument can then be reconstructed as follows:

(i) Ellipsis requires syntactic identity between the elided element and a constituent which serves as its antecedent.

(ii) Since the elided clause in (19) doesn't yield the inference that Mary sold a violin that belonged to Milstein, the ARC must be absent from the elided clause; but then the antecedent clause must have a constituent that includes the VP but excludes the ARC.

This is not the only theoretical possibility, however. We could posit instead that ellipsis resolution is at bottom a *semantic* operation. If so, a Pottsian 'in situ' analysis of appositives could posit that supplemental contributions can systematically be disregarded by ellipsis. Potts et al. 2007 discuss analogous facts involving expressives that can be disregarded under ellipsis, as in (20): the crucial observation is that B's reply does not commit B to the attitude expressed by the modifier *fucking*. Esipova 2019 makes similar remarks about redundant modifiers more generally.[16]

(20) A: I saw your fucking dog in the park. B: No, you didn't—you couldn't have.

The poor thing passed away last week. (Potts et al. 2007)

In fact, in some theories devised to explain why some specifications of pronouns

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[16] Esipova 2019 argues that speakers infer from (i) that Lucy has a dog, but that some of them need not infer that Lucy's dog is large.

(i) *Context:* Stephanie and Lucy went to the same party yesterday. Stephanie brought her ginormous dog to the party, but Lucy didn't.

'disappear' under ellipsis, one would *expect* all redundant elements to display this behavior.[17] Two points are potentially problematic for such a theory, however. First, as noted at the outset, appositives are not redundant: they are even required to a make a non-trivial contribution (by contrast, on some theories, such as Macià 2002 and Schlenker 2007, expressives are presuppositional). Second, it is not the case that, descriptively, all non-at-issue elements can be disregarded by ellipsis. In particular, the presuppositions triggered by *stop* and by *again* in (21) do not seem to escape copying. Thus something must be stipulated to explain why supplements can be disregarded.[18]

(21) a. Ann stopped smoking, and Mary did too. => Mary used to smoke

    b. Ann wants to be elected again, and Peter does too. => Peter was elected before

        The debate is summarized in (22). As we will see, these two theories do not make the same predictions when it comes to supplements that have intermediate scope.

(22) a. **Liberalized McCawley theory:** ellipsis is licensed by syntactic parallelism; if

        an appositive can be disregarded when a string it belongs to is elided, this

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[17] Following the spirit of Sauerland 2013, Schlenker 2014 proposes the following principle:

(i) Liberal Erasure (informal version): If within its local context a complex expression E has the same denotation as a structurally simpler expression E', then E can be replaced with E' for purposes of ellipsis resolution and alternative computation.

[18] One could argue that the *smoked before* component of *stop smoking* is both presupposed and at-issue, and that in (21)a the at-issue component is preserved by ellipsis. But this would fail to explain why *Mary didn't* also gives rise to the inference: it projects like a presupposition, not like an at-issue component.

indicates that it is attached above the elided constituent.

b. **Pottsian alternative:** irrespective of syntactic parallelism, ellipsis can

disregard the supplemental contributions made by antecedent.

We note for future reference that McCawley's argument extends to French, as in (23):

(23) *Context:* In each generation, the most famous cellist gets to meet the most

talented young musicians.

a. Yo Yo Ma a   présenté   ses élèves   préférés, qui vivent à Cambridge, à

Yo Yo Ma   has introduced his students favorite, who live   in Cambridge, to

Rostropovitch. Paul Tortelier aussi, bien sûr.

Rostropovich. Paul Tortelier too, of-course

'Yo Yo Ma introduced his favorite students, who live in Cambridge, to

Rostropovich. Paul Tortelier did too, of course.'

≠> Tortelier has students in Cambridge

b. Yo Yo Ma a présenté   ses élèves   qui vivent à Cambridge à

Yo Yo Ma   has introduced his students who live in Cambridge to

Rostropovitch. Paul Tortelier aussi, bien sûr.

Rostropovich. Paul Tortelier too, of-course.

'Yo You Ma introduced his students who live in Cambrdige to Rostropovich.

Paul Tortelier did too, of course.'

=> Tortelier has students in Cambridge

4.2   *Correlating Attachment Tests: English*

In the preceding sections, we argued that ARCs can be attached at a variety of syntactic

sites. To further probe the reality of this analysis, it is worth testing the correlations we

predict among various attachment tests. Focusing on ellipsis, the analysis in (22)a

predicts a refinement of McCawley's generalization: if we force an ARC to be attached sufficiently low, McCawley's generalization should be obviated, as is stated in (24).

(24) **Prediction: ellipsis combined with narrow scope tests**

If an ARC is shown (by grammatical tests or meaning) to be attached under an operator O, an ellipsis that includes O should be resolved as including the ARC.

Let us test this prediction, starting with English.[19] In (25), the meaning of the appositive (*who I hate*) invites a matrix scope attachment, and thus McCawley's prediction is that it should not be copied during ellipsis resolution: there should be no inference that the addressee hates his/her Chair. This prediction is borne out, as shown by the very low endorsement of Inference 2 (Inference 3 is expected to give rise to high endorsement because the appositive is not part of the *if*-clause).

(25) *Context:* There was an argument between a professor from your Department and one from mine. Each Department has its own Chair, who is responsible for both faculty and staff, including secretaries.[20]

–Me: My secretary says that if tomorrow she calls the Chair, who I hate, we will all be in deep trouble.

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[19] We could seek to just correlate the *readings* obtained in a sentence that allows for high and low attachment of an ARC, and those obtained in its elided counterpart. But such judgments are typically very complex, which is why we use morphological telltale signs of low attachment in order to simplify the judgment task.

[20] The statement of the inferential questions was a bit unfortunate because it used 'the speaker' and 'the addressee' instead of 'me' and 'you', but consultants who commented on this point understood 'the speaker' to refer to 'me' and 'the addressee' to refer to 'you'.

–You: My secretary does too!

Acceptability (survey A, 8 consultants)	Inference 1: The speaker hates his/her Chair.	Inference 2: The addressee hates his/her Chair.	Inference 3: (according to your secretary) if your secretary calls your Chair, we will all be in big trouble.
6.4	5.6	2.6	6.9

If the appositive were copied in the elided clause, we would obtain a structure like (26):

(26) You: My secretary does too ~~say that if tomorrow she calls the Chair, who I hate, we will all be in deep trouble~~.

The context was set up to strongly invite a reading on which *the Chair* is interpreted on a bound variable reading, with each secretary talking about the salient Chair *for her*, i.e. her own Chair. The very strong endorsement of Inference 3 suggests that this is in fact the reading obtained by the consultants. Now if the elided *I* in the purported structure in (26) refers to the person who utters it, we should get an inference that the addressee hates his/her Chair, but this inference only gets a weak endorsement. If *I* were read strictly, as referring to the speaker of the first sentence (= Me), we would get the inference that that person hates the addressee's Chair. We have not formally tested the latter possibility, but we do not think that this reading is salient or even possible.

In (27), the modally interpreted present tense refers to a future event. This should facilitate attachment of the ARC in the scope of the *if*-clause. The ARC should thus be copied during ellipsis resolution. Inference 2 should give rise to a high endorsement and Inference 1 to a low endorsement. This is not what we find: both are highly endorsed, although Inference 2 is endorsed a bit more highly than Inference 1.

(27) *Context:* There was an argument between a professor from your Department and one from mine. Each Department has its own Chair, who is responsible for both faculty and staff, including secretaries.

–Me: My secretary says that if tomorrow she calls the Chair, who in turn calls the

Dean, we will all be in deep trouble.

–You: My secretary does too!

Acceptability (survey A, 8 consultants)	Inference 1: (according to your secretary) if your secretary calls your Chair, we will all be in big trouble.	Inference 2: (according to your secretary) if your secretary calls your Chair **and in addition your Chair calls the Dean**, we will all be in deep trouble.
6.0	4.9	5.8

This result could be taken to refute the prediction in (24). But the high endorsement of Inference 1 could also be explained by noting that in (10)a, copied as (28), we already had an intermediate rate of endorsement (one we will explain in terms of 'supplement projection' in Section 7). Our consultants might thus get Inference 2 because the appositive is copied, then get a weaker inference (due to supplement projection) that *if the secretary calls the Chair, the Chair will call the Dean*. In the presence of this additional inference, Inference 2 entails Inference 1.

(28) If tomorrow I call the Chair, who in turn calls the Dean, then we will be in big

trouble.

Target inference: if tomorrow I call the Chair, the Chair will call the Dean.

Average endorsement: 3.5 (survey A, 8 consultants)

Things are simpler in (29), where the narrow scope appositive clearly seems to get copied in the course of ellipsis resolution: it gives rise to a strong endorsement of the inference that your secretary will say that your Chair didn't pick up the phone.

(29) *Context:* There was an argument between a professor from your Department and

one from mine. Each Department has its own Chair, who is responsible for both

faculty and staff, including secretaries.   There are faculty meetings in both

departments tomorrow, but the Chairs are away.

–Me: At the beginning of the meeting tomorrow, my secretary will say that a

few minutes earlier she called the Chair, who didn't pick up the phone.

–You: I am sure that my secretary will too!

Acceptability (survey A, 8 consultants)	Inference 1: (according to me) at the beginning of tomorrow's meeting, my secretary will say that my Chair didn't pick up the phone	Inference 2: (according to you) at the beginning of tomorrow's meeting, your secretary will say that your Chair didn't pick up the phone
6.6	7.0	6.9

While we didn't test this point for reasons of survey length, it seems clear to us that if this ARC is replaced with *who I hate*, which invites matrix scope attachment, no inference will arise to the effect that I hate your Chair.

In sum, in (25) a high attachment ARC clearly fails to be copied in the course of ellipsis resolution, while in (29) a low attachment ARC is clearly copied under ellipsis. Example (27) is harder to interpret due to the lack of a strong contrast between Inference 1 and Inference 2; this might be explained by a conditional inference due to supplement projection: in its presence, Inference 2 entails Inference 1.

4.3 Correlating Attachment Tests: French

Related conclusions can be obtained for French. In (30), the content of the appositive invites matrix attachment, and the appositive is not copied as part of ellipsis resolution, hence no inference that the addressee hates his/her secretary's supervisor. A bit of caution is needed, however: the context was less explicit than in the English example, and it is possible that some consultants obtained a strict reading for *son supérieur* ('her supervisor'); if so, Inference 2 wouldn't hold irrespective of whether the appositive is copied. But the strength of Inference 3 suggests that a bound reading did obtain.

(30) *Context:* There was an altercation between a professor from my Department and one from yours.

–Moi: Ma secrétaire dit que si demain elle appelle son

Me: my-fem secretary says that if tomorrow she calls   her-masc

supérieur,   que je déteste, nous   aurons   un sacré problème.

supervisor,   who I hate,   we   will-have   a serious problem

–Toi: Ma   secrétaire aussi!

You: my-fem secretary too!

'–Me: My secretary says that if tomorrow she calls her supervisor, who I hate, we

will have a serious problem.

–You: My secretary does too!.'

Acceptability	Inference 1: The speaker hates his/her secretary's supervisor.	Inference 2: The addressee hates his/her secretary's supervisor.	Inference 3: (according to your secretary) if your secretary calls her supervisor, we'll have a serious problem.
6.8	7.0	1.8	5.6

In (31), by contrast, a modally interpreted present tense is used to refer to a future event within the scope of the *if*-clause, which should facilitate narrow scope attachment. The ARC does seem to be copied under ellipsis resolution: Inference 2 is derived far more strongly than Inference 1 in this case (Inference 1 might to some extent be derived for the same reasons as in the analogous example in (27)).

(31) *Context:* There was an altercation between a professor from my Department and one from yours.

–Moi: Ma   secrétaire dit   que si demain   elle appelle   son

Me: my-fem secretary says that if tomorrow   she calls   her-masc

supérieur,   qui appelle ensuite la-fem Doyenne, nous aurons un sacré problème.

supervisor, who calls then the-fem   Dean-fem, we will-have a serious problem

– Toi: Ma   secrétaire aussi!

You: my-fem secretary too!

'–Me: My secretary says that if tomorrow she calls her supervisor, who then calls

the Dean, we'll have a serious problem.

–My secretary does too!.'

Acceptability	Inference 1: (according to your secretary) if your secretary calls her supervisor, we'll have a serious problem.	Inference 2: (according to your secretary) if your secretary calls her supervisor and in addition the latter calls the Dean, we'll have a serious problem.
5.3	3.8	6.6

4.4   Interim conclusion

In its original form, McCawley's argument is insufficient: it could be that it is because of their semantic status rather than their point of attachment that appositives can be disregarded under ellipsis. Correlating attachment tests strengthens McCawley's argument: narrow scope attachment below the ellipsis site forces the ARC to be copied. Still, our examples do not fully decide the issue. Two theories could be considered.

(i) Liberalized version of McCawley's theory: for syntactic reasons, appositive can be disregarded by ellipsis just in case they are attached above the ellipsis site.

(ii) Pottsian alternative: (a) material that makes a CI contribution can be disregarded by ellipsis; (b) some narrow scope appositives are at-issue and therefore cannot be disregarded by ellipsis (see also Holler 2005 on at-issue ARCs).

But the Pottsian alternative still has some questions to address. First, as we saw, it just isn't the case that non-at-issue material can in general be disregarded by ellipsis – the presuppositions in (21) cannot be. So the theory of what ellipsis can or cannot disregard would have to draw a principled distinction between supplements and these presuppositions.[21] Second, in several cases we considered, narrow scope ARCs differ

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[21] Note that the 'Liberal erasure' principle we stated in fn. 17 would predict that the modifier in *your fucking dog* in (20) can be disregarded in the course of ellipsis resolution because *your dog* has the same denotation (hence the denotation is not

from narrow scope conjunctions in giving rise to projection phenomena; thus they are not 'just' at-issue. It is possible that it is *to the extent* that narrow scope ARCs are at-issue that they can be disregarded by ellipsis. Showing this would require a more ambitious investigation in which one correlates the strength of projection phenomena for embedded ARCs with the ability of ellipsis to disregard ARCs.

Be that as it may, the ambiguity-based analysis raises an important question: can there be intermediate scope appositives? These could not be dealt with by way of a Pottsian dimension, since this would predict that they fail to interact scopally with operators. Taking them to be at-issue and narrow scope would be equally insufficient to derive their intermediate scope behavior. Furthermore, if some mechanism is needed to derive intermediate scope behavior, it can straightforwardly be extended to handle matrix attachment as well. We now argue that such intermediate scope readings exist.

5   The possibility of intermediate scope: English and French

5.1   Goal

In order to force intermediate scope readings, we will include a modally interpreted past tense which must be interpreted within an *if*-clause, as in (32) (the relevant verb is underlined). The target sentences include two further ingredients: a quantifier, here *each of the faculty* (boldfaced), to ensure that the ARC is not interpreted in its scope and thus has an intermediate point of attachment (under *if*, above the quantifier); and a complex noun phrase ('the fact that…', boxed) to make it unlikely that the ARC moves out of the scope of the quantifier by covert movement (since complex NPs are known

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affected by the omission of the adjective). But it's not fully clear how the same principle can explain that an ARC can be disregarded, as it must make a non-trivial contribution.

to be islands to movement). A possible structure within the liberalized McCawley analysis appears in (32), where the ARC is attached at an intermediate level.

(32) If [[**each of the faculty** had mentioned [complex NP the fact that they didn't like John]], [who had gotten fired as a result], we would now feel terrible.
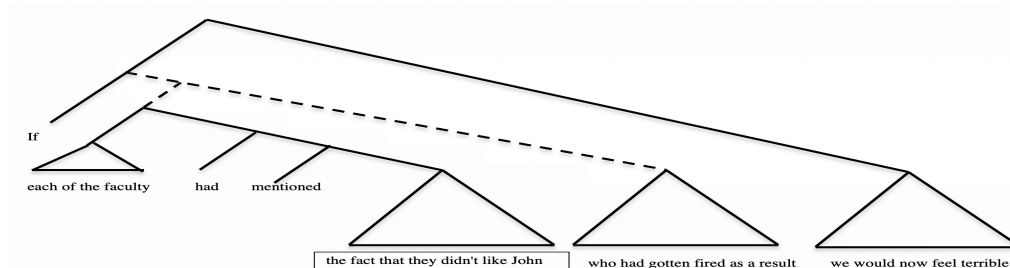
As will be seen, the target examples have various degrees of acceptability, but seem quite a bit more acceptable than matched parenthetical controls.

5.2   *Intermediate scope in English*

Our first example, already discussed in (32), appears with its context, target inference and ratings in (33). Importantly, on the most plausible reading, the meaning forces the ARC to scope above *each of the faculty:* the condition is that [each of the faculty mentions the fact that they don't like the Chair] *and* the latter gets fired as a result of this unanimous opinion; attachment under *each of the faculty* yields an implausible reading (for each faculty f, the Chair could be fired just on the strength of f's opinion).[22]

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[22] One consultant helpfully provided a paraphrase of the meaning he got: "IF the chair gets fired, it is as [a] result of the collective action of all the faculty members calling the dean to complain and not as a result of each phone call. The chair can only be fired once, after all (it's highly unlikely that after each individual phone call, the dean fires him and then reinstates him, only to fire him again after another complaint comes in.)".

(33) *Context:* there is discontent with the current Chair, John, but many people didn't say anything to the Dean for fear that she would take excessive action. I justify this course of action:

If each of the faculty had mentioned the fact that they didn't like John ____ we would now feel terrible.

Target inference: if each of the faculty had mentioned the fact that they didn't like John, John would have been fired as a result

Construction filling ___ (survey A, 8 consultants)	Acceptability	Inferential strength
a. , who had gotten fired as a result,	5.4	3.4
b. (he had gotten fired as a result)	2.0	3.0
c. and he had gotten fired as a result,	7.0	2.9
d. , who would have gotten fired as a result,	6.6	7.0
e. (he would have gotten fired as a result)	6.0	6.9

While disliked by some consultants, the intermediate scope ARC in (33)a is on average far more acceptable than the parenthetical in (33)b. Inferential judgments are primarily useful to highlight the difference between the intermediate scope ARC in (33)a and the *would have* ARC and parenthetical in (33)d,e, which presumably take matrix scope.

Acceptability of the intermediate scope appositive is decreased when it modifies a negative quantifier, as in (34)a.[23] But the contrast with the parenthetical control in (34)b remains, as the parenthetical is far more degraded.

(34) *Context:* there have been problems with the current Chair, John, but several faculty talked to the Dean to support John for fear that otherwise he might be fired (in the end, he wasn't fired). I justify this course of action:

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[23] A consultant helpfully proposes an explanation: "For whatever reasons, it sounds strange to me to say that X happened as a result of Y being done by nobody, even if it makes sense logically. My gut reaction was "as a result of what?"."

If nobody had mentioned the fact that they liked John ___ , we would now feel

terrible.

Target inference: if nobody had mentioned the fact that they liked John, John

would have been fired as a result

Construction filling ___ (survey A, 8 consultants)	Acceptability	Inferential strength
a. , who had gotten fired as a result,	4.6	3.3
b. (he had gotten fired as a result)	2.4	2.8
c. and he had gotten fired as a result,	6.8	3.1
d. , who would have gotten fired as a result,	6.3	6.8
e. (he would have gotten fired as a result)	5.9	6.8

One might want to treat the ARC as being attached low while being indexed

with a world variable introduced by the *if*-clause, as in (35):

(35) if$_{w*}$ λ**w** nobody [mention$_w$ the fact λ**w'** they liked$_{w'}$ John [who got fired$_w$]], we

would now feel terrible

This will not yield the right truth conditions, however. The problem is that the ARC is

in the scope of the negative quantifier *nobody*. In essence, the proposition *Nobody [… &*

John got fired in w] is true in any world w in which John was not fired. For this reason,

the *if*-clause isn't even predicted to be counterfactual, since John wasn't in fact fired.[24]

This is not at all the truth conditions we want. Rather, we need to derive a reading akin

to: *if nobody had mentioned that they liked John, and as a result of this collective*

omission John had been fired, we would now feel terrible. This is correctly derived if

the ARC is attached as a conjunct above *nobody*… but below *if*.

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[24] In detail: since John wasn't in fact fired, the antecedent of the conditional, namely

Nobody [… & John got fired in w], is true relative to the actual world (so the conditional

isn't counterfactual). Since the antecedent is true, the consequent must be as well, and

it should be the case that *we now feel terrible*. This is definitely not what (34)a means.

We conclude that some English ARCs can be attached with intermediate scope, including in sentences with islands that preclude an analysis with covert movement.

5.3 Intermediate scope in French

Turning to French, we replicate our findings from English, but once again with embedded ARCs that are degraded for some consultants. As in English, we use the modally interpreted past tense (here: the imperfect) to force an intermediate scope reading. (36) is analogous to (33), and (37) to (34). Overall, the contrasts are rather clear: in both (36) and (37), the target a-sentence is more acceptable than the degraded parenthetical b-sentence, and the inference suggests that the ARC has scope under *if*.[25]

(36) *Context:* within our Department, the Director, Jeanne, became unpopular with the professors, but most didn't want to say anytying to the Dean for fear that he would over-react. I justify this attitude in these terms:

Si	chaque	professeur	avait	mentionné le fait	qu'il
if	*each*	*professor*	*had*	*mentioned the fact*	*that he*

n'	aimait pas Jeanne ____	nous	nous	sentirions	mal.
NE	*liked not Jeanne ___*	*we*	*us*	*would-feel*	*bad*

'If each professor had mentioned the fact that he didn't like Jeanne ____ we would feel bad.'

Target inference: if each professor had mentioned the fact that he didn't like

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[25] Appendix I includes a paradigm in which intermediate scope is forced by the presence of the subjunctive. But the combination of an intermediate scope ARC, the subjunctive, and a negative quantifier makes the result degraded, although the parenthetical is worse.

Jeanne, Jeanne would have been fired

Construction filling ___ (survey, 8 consultants)	Acceptability	Inferential strength
a. , qui ensuite avait été virée, *, who then had been fired,*	4.8	2.8
b. (elle avait ensuite été virée) *(she had then been fired)*	1.8	2.0
c. et qu'elle avait ensuite été virée, *and that she had then been fired,*	6.6	2.1
d. , qui ensuite aurait été virée, *, who then would-have been fired,*	6.9	6.1
e. (elle aurait ensuite été virée) *(she would-have then been fired)*	5.9	6.5

(37) *Context:* within our Department, there have been several conflicts with the

Director, Jeanne, but several of us told the Dean that they supported Jeanne. I

justify this attitude in these terms:

Si personne   n'avait mentionné   le   fait qu'   il

si nobody   NE had mentioned   the   fact that   he

appréciait Jeanne ____, nous   nous   sentirions mal.

liked   Jeanne ____, we   us   would-feel bad

'If nobody had mentioned the fact that he liked Jeanne ____, we would feel bad.'

Target inference: if nobody had mentioned the fact that they liked Jeanne,

Jeanne would have been fired.

Construction filling ___ (8 consultants)	Acceptability	Inferential strength
a. , qui ensuite avait été virée, *, who then had been fired,*	4.9	2.9
b. (elle avait ensuite été virée) *(she had then been fired)*	2.4	1.5
c. et qu'elle avait ensuite été virée, *and that she had then been fired,*	7.0	2.5
d. , qui ensuite aurait été virée, *, who then would-have been fired,*	7.0	6.1
e. (elle aurait ensuite été virée) *(she would-have then been fired)*	5.9	6.5

5.4   Interim conclusion

In sum, in both English and French, ARCs can in some examples attach not just with

matrix or narrow scope, but also with intermediate scope. Target sentences are less

than perfect, to various degrees: our consultants accept our English example with *each*

in (33)a a bit more readily than our example with *nobody* in (34)a. In French, related examples in (36)a and (37)a have the same intermediate status. Crucially, in all cases, parenthetical controls are far more degraded, yielding clear contrasts with the appositives. This provides an important argument against an analysis in which ARCs are ambiguous between a 'conventional implicature' and an 'at-issue' reading: such a theory would fail to explain the possibility of intermediate scope.[26] Furthermore, an analysis of intermediate scope readings based on covert movement is implausible because our target constructions systematically involved a complex NP island; and we saw that in some cases an indexing analysis just yields the wrong truth conditions.

We take the existence of intermediate scope readings to show that we need a mechanism of non-local attachment of ARCs. Once this mechanism is in place, it is hard to see how it could *fail* to yield some wide scope readings as well, making a bidimensional analysis unnecessary. (Another incarnation of this argument is seen in Appendix IV, which compares the present approach to that of AnderBois et al. 2013).

6   Non-local attachment of clauses: an argument from ASL

The crux of our proposal lies in a mechanism that allows some clauses to be attached to any propositional node that dominates their DP associate. But is there independent evidence for such a mechanism? To support McCawley's analysis, with matrix attachment only, one could have mentioned the behavior of clausal parentheticals. But our liberalized version of McCawley's mechanism cannot be motivated in this way because we argued at every juncture that ARCs are more liberal than parentheticals.

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[26] Koev 2018 posits that narrow scope ARCs just 'lack a declarative operator', unlike matrix scope ARCs. It's unclear how this could allow for intermediate scope ARCs.

We now turn to independent data from ASL that seem to display evidence for a non-local attachment of clauses, in cases that do not involve ARCs. In a nutshell, some clauses that are not distinguished from normal ones (i.e. clauses that have nothing restrictive- or appositive-like in their overt syntax) can be forced to take higher scope, including out of syntactic islands, and in a way that yields the expected correlations with ellipsis tests. Here we just summarize conclusions from Schlenker 2021b, which is cautious to discuss several theoretical directions, but favors the present one.

In ASL, conjunction can be asyndetic, which yields narrow scope readings for some apparently independent clauses. Schlenker 2021b uses non-manual markers to force them to be interpreted outside the scope of various operators. The clearest version of the paradigm involved two non-manuals: Brow Raise, notated as ^, which marks the scope of an *if*-clause; and Role Shift, notated as *RS*, which marks the scope of an attitude verb with context shift (Quer 2005, 2013; Schlenker 2017a,b). Importantly, there are alternative analyses of Role Shift in terms of quotation rather than context shift (e.g. Davidson 2015); on these analyses, role-shifted clauses could potentially be treated as being (quoted) root clauses. For this reason, all paradigms were replicated with normal indirect discourse replacing Role Shift (this is possible because ASL has both options: not just Role Shift, but also English-style indirect discourse without Role Shift). It is thus for reasons of clarity that we focus here on paradigms with Role Shift, as the non-manual marker makes the point of attachment of the clause very clear. Importantly, inferential tests performed did not indicate anything but an at-issue contribution.

Let us sketch the logic of the argument (see Appendix II for data). Schematically, Schlenker 2021b considers the structures in (38), where *&* corresponds to the word *PLUS* (a standard way to mark conjunction in ASL), and where absence of

Brow Raise (glossed as ^) leads to the insertion of Brow Lowering (glossed as ~). Brow movement is indicated on the first line above the words, Role Shift on the next line up.

```
(38)  a.         RSᵢ_____
                 ^  _____
           … SAY IF  Clause-1      Clause-2      & Clause-3, …

      b.         RSᵢ_____
                 ^_____      ~_____      ^_____
           … SAY IF  Clause-1      Clause-2      & Clause-3, …

      c .        RSᵢ_____                   RSᵢ_____
                 ^_____      ~_____      ^_____
           … SAY IF  Clause-1      Clause-2      & Clause-3, …
```

The clause of interest is Clause-2 (boldfaced): it is under Role Shift and Brow Raise in (38)a, under Role Shift but without Brow Raise (and with Brow Lowering) in (38)b, and it is exempted from both in (38)c, with Brow Lowering replacing Brow Raise.

There are three main results. First, Clause-2 may take narrow, intermediate or wide scope depending on which non-manuals it carries: narrow scope when it co-occurs with Brow Raise (^) and Role Shift (RS), as in (38)a: the two non-manuals indicate that Clause-2 is in the scope of two operators. Clause-2 has intermediate scope when it is exempted from Brow Raise but not from Role Shift, as in (38)b: in that case, it is interpreted in the scope of the attitude verb but not of conditional. Finally, Clause-2 is interpreted with matrix scope when it is exempted from both Brow Raise and Role Shift, as in (38)c. Second, correlations with ellipsis yield results that are predicted by our liberalized McCawley analysis: a clause can be disregarded by ellipsis when its attachment point is above the ellipsis site. Third, there is no evidence at all of 'projection' phenomena, unlike in the case of ARCs: in view of the current data, the target clauses behave like normal propositions that can be attached at various levels.

While Schlenker 2021b discusses alternative explanations, he finds them

lacking.[27] Since these constructions have not been the object of much study in ASL, conclusions might of course change in the future. But for present purposes, this study makes two relevant contributions: (i) there seems to be independent evidence for a mechanism that attaches clauses non-locally to propositional nodes that dominate their DP associate; (ii) unlike most ARCs, the target ASL clauses seem to be at-issue.

7   Pragmatics I: the new problem of supplement projection

On the present analysis, the fact that high attachment ARCs fail to interact scopally with semantic operators is due to their syntax: they are just attached to the root node despite being apparently embedded. But as we saw in passing, narrow scope ARCs often do not seem to have the same at-issue behavior as control conjunctions. For instance, the narrow scope ARC in (8)a yielded an intermediate result relative to the target inference (*if tomorrow I called the Chair, the Chair would call the Dean*), one that was relatively weak but stronger than the conjunctive control in (8)c. While ARCs cannot be treated as presupposition triggers, we will argue in this section that narrow scope ARCs give rise to projection phenomena reminiscent of presupposition projection. Presuppositions are supposed to be locally trivial or 'transparent', in the sense that they should be entailed by their local contexts. We will argue, by contrast, that the content of an ARC should be non-trivial relative to its local context (hence non-transparent), but that it should be easy to add assumptions to the global context to make

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[27] Schlenker 2021b discusses the possibility that the target ASL clauses move by covert movement, or that they are evaluated *in situ* while being indexed with a non-local world variable. He argues that both solutions have trouble yielding the right truth conditions, and that the movement solution requires extraction out of a coordinate structure island.

the ARC locally trivial. This hypothesis ('Translucency') is stated in (39).

(39) **Hypothesis: Translucency**

    a. A supplement must make a non-trivial contribution in its local context relative to the global context C of the conversation. (cf. Potts 2005)

    b. It should be 'easy' to accommodate assumptions that make a supplement locally trivial, i.e. to add assumptions to C to obtain a strengthened context C^+ relative to which the supplement is locally trivial.

We write 'easy' in scare quotes in (39)b because we will not provide a theory of which assumptions can be added to the global context in this way. However we will draw a direct connection with an independent phenomenon, that of informative presuppositions, which will constrain what counts as 'easy to accommodate'.

7.1 Supplements vs. presupposition triggers

But first, why couldn't ARCs be treated as standard presupposition triggers? Both Potts's theory and our liberalized McCawley analysis treat ARCs as a different kind of beast altogether. Still, since presuppositions are notoriously prone to 'projecting', it is worth asking why a standard presuppositional analysis cannot work.

Potts 2005 gives a forceful response: presuppositions can and often must make a trivial contribution relative to their local context. ARCs, by contrast, must make a non-trivial contribution; this is illustrated by the contrasts in (40)–(41), where the underlined presupposition trigger in a. is acceptable, but the underlined ARCs in b. isn't.

(40)   Lance Armstrong survived cancer.

    a. And most riders <u>know that Lance Armstrong is a cancer survivor</u>.

    b. #When reporters interview Lance, <u>a cancer survivor</u> / <u>who survived cancer</u>, he often talks about the disease. (after Potts 2005)

(41) a. Although he came home for Thanksgiving, John came home <u>again</u> for

Christmas.

b. #Although he came home for Thanksgiving, John, <u>who had come home</u>

<u>before</u>, came home (again) for Christmas. (Schlenker 2021a)

If one wanted to maintain a presuppositional analysis of ARCs, one would thus

have to say that they yield obligatorily informative presuppositions. This might seem

like an odd notion; but since the literature already argues that there are informative

presuppositions (e.g. Stalnaker 2002, von Fintel 2008), positing a category of

'obligatorily informative presuppositions' might not be such an abhorrent idea.

Importantly, however, a presuppositional treatment won't obviate the need for the

special mechanisms posited by Potts 2005 or by the present analysis to account for the

matrix scope behavior of many ARCs. A simple argument can be seen in (42): in (42)a,

the presupposition seems to project and to yield the inference that Mary smoked before

(why this should be so is a matter of debate, see Heim 1992 and Geurts 1999); but what

is at least as clear is that one gets an inference that Ann believes that Mary smoked

before. In (42)b, by contrast, the former inference is present (= Mary smoked before),

but the latter inference is absent (= one need not infer that Mary smoked before).

(42) a. Ann believes that Mary has stopped smoking.

(a) =>? Mary smoked before; (a) => Ann believes that Mary smoked before

b. Ann believes that Mary, who had a cigarette a minute ago, doesn't smoke.

(b) => Mary smoked before; (b) ≠> Ann believes that Mary smoked before

It is usually thought that presuppositions make their effects felt locally, and *in addition*

impose conditions on the global context of the conversation. But matrix-level ARCs

don't make any contribution locally, and shouldn't be lumped with presuppositions.[28]

Despite these differences between ARCs and presupposition triggers, they share an important property: *when embedded*, both may give rise to patterns of projection that depend on the logical properties of the operators in whose scope they appear.

7.2 *Antecedent of conditionals: earlier examples*

We already discussed in Section 2.1 narrow scope appositives embedded in the antecedent of conditionals. (8)-(10) all had the form *if p, who q, then r,* and they gave rise to a weak inference that *if p, q*, as summarized in (43).

(43) **if p, who q, then r** gives rise in (8)-(10) to a weak inference: if p, q, e.g.

a. If tomorrow I called the Chair, who in turn called the Dean, then we would be in big trouble. (= (8)a)

---

[28] The particles *too* and *also* display in this respect a different behavior from other presupposition triggers: in (i), the presupposition is just that another salient person than Mary is in bed, not that Mary's parents have any beliefs about this other person.

(i) [Two kids are talking to each other on the phone.] –John: I$_1$ am already in bed. – Mary: My parents think I$_F$ am also$_1$ in bed.   (Heim 1992)

In other respects, however, *too* and *also* display completely different properties from ARCs, and it appears hard to lump these two categories together: unlike ARCs, *too* and *also* (1) are focus-sensitive, (2) require an antecedent in the discourse, (3) rarely make informative contributions, and (4) sometimes trigger modalized presuppositions, as in (ii) below (see van der Sandt and Geurts 2001, and van de Sandt and Huitink 2003).

(ii)   –A. Harry may well have dinner in New York. –B. John is having dinner in New York, too. (cited in van der Sandt and Geurts 2001)

Target inference: if tomorrow I called the Chair, the Chair would call the Dean.

Endorsement: **3.8**

b. If tomorrow I call the Chair, who in turn calls the Dean, then we will be in big trouble. (= (10)a)

Target inference: if tomorrow I call the Chair, the Chair will call the Dean.

Endorsement: **3.5**

Descriptively, this conditional inference is structurally similar to one obtained with presupposition triggers that appear in the second part of a conjunction embedded in an *if*-clause, namely in sentences of the form *if p and qq', r*, where *qq'* triggers a presupposition that *q*. These examples are predicted by dynamic semantics and related frameworks to trigger the conditional presupposition *if p, q* (e.g. Heim 1983, Beaver 2001, Schlenker 2009), and this is indeed found in some examples, as shown in (44) (not in all, due to what is called the Proviso Problem, also discussed in Appendix II).

(44) **if p and qq', then r** gives rise (in some cases) to an inference that *if p, q*.

If Spaceman Spiff lands on Planet X and is bothered by the fact that his weight is greater than it would be on Earth, he won't stay long. (Beaver 2001, (156))
=> if Spaceman Spitt lands on Planet X, his weight will be greater than it would be on Earth

Why should there be such a similarity between presupposition triggers and ARCs? Within dynamic approaches, the facts in (44) hold because (i) the local context c' of *qq'* is the global context C updated (intersected) with the content **p** of the first conjunct, and (ii) the presupposition **q** of *qq'* must be entailed by this local context c'. Writing c' $\models$ q to mean that *every world in c' satisfies q*, we thus have the requirement in (45)a (= *every world satisfying C and p satisfies q*), which is equivalent to (45)b (=

*every world satisfying C is such that, if it satisfies **p**, it satisfies q).*

(45) a. c' |= q, i.e. C $\wedge$ **p** |= q, which is equivalent to

    b. C |= p => q

       We would predict the same type of condition in (43) if we required that the appositive *who q* is presupposed in its local context. This is because we took *p, who q* to have the semantics of a conjunction, and thus the local context of the appositive should be the same as the local context of the second conjunct in *p and qq'*. The requirement that *who q* (with *who* analyzed as an E-type pronoun) follow from its local context would give rise to the inference in (46), for the same reason as in (45).

(46) C |= p => who q

Applied to the examples in (43), (46) would lead to two undesirable consequences, however. First, the ARC would be expected to make a trivial contribution in its local context, which is exactly the point that Potts argued against. Second, one would expect a strong inference to the effect that *if tomorrow I called the Chair, the Chair would call the Dean*. But the inferences we obtained in (8)a, (9)a and (10)a were relatively weak.

       Both problems are addressed by positing the requirement in (47) in lieu of that in (46). While the ARC should *not* be trivial relative to its local context computed with respect to the global context C (this is the informativity condition in (39)a), it should be 'easy' to add to C assumptions that lead to a context C^+ that makes the ARC trivial in its local context. On the present view, the inference is weak because the ARC does not require that the actual global context C satisfy this conditional inference, but only that one can 'easily' accommodate assumptions that will make it go through.

(47) C^+ |= p => who q

7.3 *Consequent of conditionals*

Turning to the consequent of conditionals, we attempt to provide a direct comparison between the projection of presuppositions and that of narrow scope supplements.

The presuppositional example appears in (48); it is of the form *if p, qq'?*, where *qq'* triggers a presupposition *q* (due to the definite description *DSK's meeting with the judge the day before*), to the effect that there was a meeting on a certain day. This gives rise to the presupposition that *if p, q*. The reason is that the local context of the consequent relative to a global context C is C $\wedge$ **p**, hence the same requirement as in (45). To argue that this is indeed a presupposition, it is important to embed the entire conditional *if p, qq'* in a question in order to tease apart entailments from presuppositions: when *q* is a normal entailment of *qq'* (rather than a presupposition), *if p, qq'* gives rise to the inference that *if p, q*, but the corresponding question does not.

(48) *Context:* DSK, a French politician, is thought to be in discussions to settle a civil lawsuit against him. The speaker is talking to a journalist who might have information about how the procedure will unfold.

If the big event takes place on Tuesday, will it turn out on Wednesday that during DSK's meeting with the judge the day before, he agreed to a settlement?

Acceptability (survey B, 8 consultants)	Inference 1: DSK will meet with the judge on Tuesday	Inference 2: If the big event takes place on Tuesday, DSK will meet with the judge on that same day
6.1	3.9	6.4

With this background in mind, we can assess similar facts with ARCs and relevant controls as in (49), with the same inferential questions as in (48). Importantly, the ARC contains a past tense evaluated relative to a future moment. The goal is to enforce a narrow scope attachment, which is essential to ensure that we are testing genuine projection effects rather than just matrix attachment. This forward shifted past tense had the desired effect for consultants who found the parenthetical in (49)b to be

degraded. But others found no or little difference in acceptability between (49)a and (49)b, possibly because of a mechanism of 'perspectival shift' akin to that discussed by Harris and Potts 2009a,b. Inferences obtained by these consultants might be due to a matrix rather than to a narrow scope attachment of the ARC. To control for this, we provide not just aggregate scores over all consultants, but also, italicized, average scores for those consultants that rated the target sentence in (49)a at least 2 points above the control in (49)b. (Here and below, target inferential scores are boldfaced.)

(49) *Context:* DSK, a French politician, is thought to be in discussions to settle a civil

lawsuit against him. The speaker is talking to a journalist who might have

information about how the procedure will unfold.

If the big event takes place on Tuesday, will it turn out on Wednesday that DSK

____ agreed to a settlement?

Construction filling ___ (survey B, 8 consultants; *3 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inference 1: DSK will meet with the judge on Tuesday	Inference 2: If the big event takes place on Tuesday, DSK will meet with the judge on that same day
a. , who met with the judge the day before,	5.9 *5.3*	4.0 *2.7*	**5.9** ***5.7***
b. (he met with the judge the day before)	4.1 *1.3*	5.5 *4.7*	4.5 *3.7*
c. (he will have met with the judge the day before)	6.4 *5.3*	3.4 *2.0*	6.9 *7.0*
d. met with the judge the day before and	6.8 *6.3*	1.0 *1.0*	2.4 *2.7*

As can be seen, the ARC in (49)a gives rise to a conditional inference akin to that in (48), including when one restricts attention to consultants who found the control in (49)b significantly worse. This highlights the similarity between the projection of presuppositions and of narrow scope supplements. Still, the small number of consultants and the subtlety of the effects make it impossible to argue that the strength of Inference 2 is weaker in (49)a than in (48): more powerful methods would be

needed.[29]

7.4   *A more complete paradigm with embedding under* **wonder**

We turn to a more systematic paradigm aimed at assessing supplement projection under

wonder, with the advantage that this construction can easily be further embedded while

giving rise to clear introspective patterns of presupposition projection. Our starting

point is the observation that when *pp'* entails (rather than presupposes) *p*, *I wonder*

whether p doesn't give rise to an inference that *I believe that p*, as seen in (50)a. But

when *p* is a presupposition of *pp'*, the inference does go through, as shown in (50)b.

(50) a. I wonder whether Ann used to smoke and has stopped. ≠> Ann used to smoke

       b. I wonder whether Ann has stopped smoking. => Ann used to smoke

Why these patterns arise is a separate question (see for instance Heim 1992 and Geurts

1999).[30] Here we will be content to use them to determine whether narrow scope ARCs

give rise to related inferential patterns. While it is not trivial to enforce narrow scope

of ARCs, we will use a past tense evaluated with respect to *will*, as in Sections 2.2, 7.3.

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[29] The inferences with the *will*-parenthetical in (49)c suggest that modal subordination

yields a stronger conditional than unconditional inference in this case. This is expected

in view of other examples of modal subordination, e.g. (i), from Roberts 1989.

(i) If Edna forgets to fill the birdfeeder, she will feel very bad. The birds will get hungry.

[30] In Heim's (1992) treatment, *x believes that qq'* presupposes *x believes that q* in case

q is the presupposition of the embedded clause. But as noted by Heim herself and Geurts

1999, out of the blue one gets a presupposition that in fact *q* is the case. In the first

person present tense example in (50)b, the difference is nearly immaterial, as both

inferences lead to an assumption that the speaker assumes that Ann used to smoke.

The case of a simple assertion with *wonder* was already discussed in (11), repeated with additional data in (51). It yields a clear projection effect for the ARC in (51)a, but one must check (as in (49)) that this isn't for the wrong reason: consultants who marginally accept the parenthetical control in (51)b might allow the ARC in (51)a to be attached high, in which case its semantic behavior wouldn't be testing a narrow scope ARC. To sidestep this risk, we provide additional information about consultants that preferred the a-appositive to the b-parenthetical by at least 2 points.

(51) I will be wondering next Wednesday whether DSK _____ agreed to a settlement.

 Target inference: DSK will meet with the judge next Tuesday

Construction filling ___ (survey B, 8 consultants; *4 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inferential strength
a. , who met with the judge the day before,	5.4 *5.3*	**5.8** *6.5*
b. (he met with the judge the day before)	4.0 *2.5*	5.6 *6.0*
c. (he will have met with the judge the day before)	6.8 *6.5*	6.8 *7.0*
d. met with the judge the day before and	7.0 *7.0*	1.3 *1.0*

 The paradigm in (51) raises a worry, however. Embedding under *will* still allows for different attachment points, above *wonder*, or below *wonder*. If attachment is below *wonder*, the inference obtained in (51)a is indeed evidence of projection (since at-issue material, as in (50)a, fails to give rise to factive inferences). But if attachment is above *wonder* (while still being under *will*), we are not learning anything about a presupposition-like behavior in this case. This worry can be addressed by embedding the same sentence in a question, as in (52). Endorsement of the target inference is far less clear (52)a than in (51)a, but still stronger than in the at-issue control in (51)d.

(52) Will we be wondering next Wednesday whether DSK _____ agreed to a

  settlement?

Target inference: DSK will meet with the judge next Tuesday

Construction filling ___ (survey B, 8 consultants; *4 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inferential strength
a. , who met with the judge the day before,	5.6 *5.5*	**4.4** ***3.3***
b. (he met with the judge the day before)	4.1 *2.3*	5.3 *5.0*
c. (he will have met with the judge the day before)	6.5 *6.0*	6.8 *7.0*
d. met with the judge the day before and	7.0 *7.0*	1.3 *1.0*

Further types of embedding make the same point, but more strongly. Embedding under *I doubt that* yields sharp inferential contrasts between the target ARC in (53)a and the conjunctive control in (53)d. The same conclusions can be drawn from embedding under *might*, as seen by the inferential contrast between (54)a and (54)d.

(53) I doubt we'll be wondering next Wednesday whether DSK _____ agreed to a settlement.

Target inference: DSK will meet with the judge next Tuesday

Construction filling ___ (survey B, 8 consultants; *4 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inferential strength
a. , who met with the judge the day before,	5.5 *5.5*	**5.5** ***6.0***
b. (he met with the judge the day before)	3.8 *2.5*	5.1 *6.0*
c. (he will have met with the judge the day before)	6.8 *6.5*	6.8 *7.0*
d. met with the judge the day before and	7.0 *7.0*	2.8 *3.0*

(54) We might be wondering next Wednesday whether DSK _____ agreed to a settlement.[31]

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[31] The survey contained a typo in (54)a: *agreed to a settlement* was missing from this item (as noted by a consultant in the comments). It seems that the consultants, all of them linguists, had no trouble making the correction since they rated this item very highly.

Target inference: DSK will meet with the judge next Tuesday

Construction filling ___ (survey B, 8 consultants; *5 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inferential strength
a. , who met with the judge the day before,	5.9 *5.8*	**5.0** *4.8*
b. (he met with the judge the day before)	3.9 *2.6*	5.1 *5.2*
c. (he will have met with the judge the day before)	6.6 *6.4*	6.8 *7.0*
d. met with the judge the day before and	7.0 *7.0*	1.3 *1.0*

Importantly, (55) tests projection in a conditional of the form *if p, … [DSK, who Q, R]*, where the ARC appears in the consequent. Structurally simpler examples with presuppositions, of the form *if p, qq'* (where *qq'* presupposes *q*) are predicted by dynamic semantics and related frameworks to presuppose *if p, q*, as seen in connection with (48). In case the ARC is attached below *will* but above *wonder*, we put the target clause in a question to determine whether this inference projects like a presupposition (as we did in (48) and (49)a). The target construction in (55)a triggers a strong conditional inference, whereas the conjunctive control in (55)d doesn't.

(55) If the big event takes place on Tuesday, will we be wondering on Wednesday

   whether DSK _____ agreed to a settlement?

Construction filling ___ (survey B, 8 consultants; *4 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inference 1: DSK will meet with the judge on Tuesday	Inference 2: If the big event takes place on Tuesday, DSK will meet with the judge on that same day
a. , who met with the judge the day before,	5.5 *5.3*	3.4 *3.8*	**5.8** *5.8*
b.(he met with the judge the day before)	4.0 *2.5*	4.3 *5.3*	5.1 *4.8*
c. (he will have met with the judge the day before)	6.6 *6.3*	4.5 *4.8*	6.4 *6.0*
d. met with the judge the day before and	6.9 *7.0*	1.4 *1.3*	1.4 *1.3*

7.5   *Interim conclusion*

We conclude that in diverse embedding situations, narrow scope appositives give rise to projection effects that are similar to those of presuppositions. Controls are tricky, however: to ensure that consultants attach the target appositive with narrow scope, we

must ascertain that they do not accept parenthetical controls with analogous grammatical properties. This succeeded in some consultants and failed in others. But crucially, our conclusions hold when we restrict attention to those consultants that found a significant acceptability difference between targets and controls.

Stepping back, our hypothesis in (39) can account both for the similarities and for the differences between supplements and presuppositions. First, unlike presuppositions, supplements must make a non-trivial contribution: relative to the global context C of the sentence, their content should not be entailed by their local context. Second, however, narrow scope supplements should give rise to projection effects: it should be 'easy' to add assumptions to the context C to obtain a context C^+ relative to which they are entailed by their local context. Third, the corresponding inferential effects should generally be weak, since they do not directly put constraints on the context C of the conversation: in the pattern in (43), there was no requirement that relative to C it should hold that *if tomorrow I called the Chair, the Chair would call the Dean*. Rather, it was just that it should be 'easy' to add assumptions to C to make the conditional go through. It must be said, however, that the weakness of these effects cannot be assessed rigorously without more powerful methods, and a systematic comparison with presupposition triggers. Our only attempt in that direction pertains to (49)a vs. (48), and without experimental methods all we can state is that both cases yield presupposition-like inferences, not that one inference is stronger than the other.[32]

_____

[32] There is an additional difficulty: presupposition triggers come in different strengths, with some ('weak triggers') that make at-issue contributions more easily than others ('strong triggers'). Thus the potential 'weakness' of supplement projection would need

8 Pragmatics II: the epistemic status of supplements

8.1 The connection with informative presuppositions

Since the theory developed in this piece does not derive from first principles what it means for an assumption to be 'easy' to accommodate, we need some way to assess this notion on independent grounds. Redundant modifiers of definite descriptions might do precisely this: because of the semantics of *the*, they trigger presuppositions; but to justify their presence, these presuppositions must be informative, and thus 'easy' to accommodate.

To see the main connection, consider (56)a,b, uttered in a context in which one is awaiting the election result. It is hard to accommodate this piece of information, and as a result it is better to present it as being at-issue than as a supplement. Importantly, the same contrast holds with the informative presupposition in (56)c,d.

(56) *Context:* Television viewers are anxiously awaiting the results of the presidential

elections (they have not been announced yet). The TV anchor says:

a. [6.8] The Democratic candidate, who is 47 years old, has just won.

b. [4.6] The Democratic candidate, who has just won, is 47 years old.

c. [6.6] The 47-year-old Democratic candidate has just won.

d. [4.1] The victorious Democratic candidate is 47 years old.

(Survey A, 8 consultants)

When the context is changed so that the news about the election result is already out, the contrast disappears or gets reversed, both for ARCs and for definite descriptions:

(57) *Context:* The results of the presidential elections have just been announced by a

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to be assessed relative to a presuppositional baseline, and the choice is not obvious.

TV anchor (and the results still appear in the background). Another TV anchor

adds:

a. [4.8] The Democratic candidate, who is 47 years old, has just won.

b. [5.8] The Democratic candidate, who has just won, is 47 years old.

c. [4.9] The 47-year-old Democratic candidate has just won.

d. [6.6] The victorious Democratic candidate is 47 years old.

(Survey A, 8 consultants)

In all the c-d examples, the linearly first modifier (47-year old, victorious) couldn't affect the denotation of the description and it is in this sense redundant: in a standard Presidential election in the US, there is exactly one Democratic candidate, and thus when there is no presupposition failure the denotation of *the victorious Democratic candidate* is the same as that of *the Democratic candidate*, as is that of *the 47-year-old Democratic candidate*. So all these supernumerary modifiers can do is trigger an additional presupposition. But to avoid violating a Gricean maxim of brevity, the presuppositions should have some function, such as being informative and/or relevant. A statement of this principle (from Schlenker 2005) appears in (58).

(58) Minimize Restrictors!

A definite description *[the A B]* (…) is deviant if *A* is redundant, i.e. if:

(i) *the B* is grammatical and has the same denotation as *the A* (= Referential

Irrelevance), and

(ii) *A* does not serve another purpose (= Pragmatic Irrelevance).

To illustrate, (59)a violates (58) because *blond* is both referentially and pragmatically irrelevant. If John has two brothers, one of whom is blond, (59)b is denotationally relevant. In (59)c, *idiotic* is referentially irrelevant but triggers an

informative presupposition, hence this is a way of informing the addressee that the speaker takes John's father to be an idiot (why expressive content makes good informative presuppositions is a further question, see for instance in Schlenker 2007).

(59) a. ??John's blond father has arrived

    b. John's blond brother has arrived.

    c. John's idiotic father has arrived.

    Being informative is one way in which a redundant modifier can be made acceptable. When a presupposition is informative and acceptable, the global context C must be one that can be strengthened to a context C^+ in which the presupposition is locally uninformative (= trivial). An ARC with the same content as the presupposition should thus be acceptable as well, as is stated in the following generalization:[33]

(60) In a given environment, if a certain content can be used as an informative

    presupposition triggered by a redundant modifier in a definite description, it can

    also be used as a supplement in an ARC.

    One last question is whether informative presuppositions really tell us something independent from appositives. There have been attempts, such as Morzycki 2008, to treat related redundant modifiers as supplements. As explained by Leffel 2014, Morzycki's theory doesn't yield the right readings for redundant modifiers of definite

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[33] We remain cautious about cases in which redundant modifiers are entirely uninformative (unlike in (60)): their non-triviality requirements might be weaker than those of supplements; thus to our ear, (i)b is less acceptable than (i)a.

(i)   a. <?> Little Johnny is happy, and this happy boy makes me smile.

       b. <#> Little Johnny is happy, and this boy, who is happy, makes me smile.

descriptions.[34] But in any event, there are conceptual and empirical arguments for not treating redundant modifiers as supplements. On the conceptual side, the standard theory of presuppositions triggered by definite descriptions is all we need for these cases (once one grants that some presuppositions can be informative). On the empirical side, redundant modifiers might not have the same scopal possibilities as ARCs: the latter can be attached to various propositional nodes, whereas the former must arguably be evaluated in tandem with the words they modify. A minimal pair appears in (61):[35]

(61) *Context:* There was a lottery. Three players bet on 100, and none on 99. 99 came up.

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[34] Morzycki 2008 investigated redundant modifiers such as those in (i) (with *every*), also discussed in Leffel 2014. Importantly, Leffel treats them as presuppositional.

(i)　　a. Every unsuitable word was deleted. (Larson and Marušič 2004)

　　　　b. Every harmful toxin will be eliminated. (Leffel 2014)

As Leffel 2014 notes, Morzycki's account is intended to derive in (i)a the inference that the sum of contextually given words has the property of being unsuitable, and it's not clear how this will extend to singular descriptions such as *my sick mother*.

[35] We also tested (i), but the results do not display any contrast, contrary to expectation:

(i) *Context:* We are discussing what would happen if there still were a king of France. Jean d'Orléans, count of Paris, is heir to the French throne, which doesn't exist. But if France were still a monarchy,

　　　　a. [4.3] the king, who is unknown, would be a celebrity.

　　　　b. [4.4] the unknown king would be a celebrity. (Survey B, 8 consultants)

Nobody won, but if 100 had come up, ___

a. [5.4] the three winners, who are unhappy, would have been happy instead.

b. [3.3] the three unhappy winners would have been happy instead.

(Survey B, 8 consultants)

To make sense, (61)b would have to involve a noun read De Re and an adjective read De Dicto. This mixing seems to be impossible or very difficult, possibly because quite generally a noun and its modifiers get evaluated with respect to the same world. The ARC in (61)a is more acceptable: it can be evaluated independently of the noun.

In sum, informative presuppositions triggered by redundant modifiers in definite descriptions can help constrain what it means for an assumption to be 'easy' to accommodate, and the explanation is not circular: redundant modifiers in definite descriptions are not just appositives in disguise.

8.2   *Differences between supplements and informative presuppositions*

(60) posits that a good informative presupposition makes a good supplement. Does the converse always hold? Probably not. As an example, the ARC in (62)a is more acceptable than the informative presupposition in (62)b:

(62) *Context:* The following is the beginning of an email informing the author of a submitted abstract of the outcome of the selection procedure.

Dear Colleague,

This is to provide you with information about Sinn und Bedeutung 2020.

a. [5.4] Your contribution, which is accepted, will be presented on the first day of the conference.

b. [3.4] Your accepted contribution will be presented on the first day of the conference.

(Survey A, 8 consultants)

The reason might be that an informative presupposition presumably forces the evaluation of the entire discourse relative to the accommodated context C^+, which in this case entails information that the authors are eagerly awaiting. By contrasts, ARCs do not force evaluation of the entire discourse relative to C^+, as they just require that one *could* add to C assumptions that make the content of the ARC locally trivial.

Possibly sharper contrasts arise when an expression is used as a performative: this is possible with ARCs but difficult to achieve with informative presuppositions.[36]

(63) *Context:* A colleague from another institution has badmouthed my Department, but he has just apologized to me. I reply to him as follows:

a. [6.0] Your apology, which is accepted, will be conveyed to my colleagues.

b. [6.8] Your apology, hereby accepted, will be conveyed to my colleagues.

c. [3.3] Your accepted apology will be conveyed to my colleagues.

(Survey A, 8 consultants)

We conclude that the converse of (60) does not hold: while contents that make good informative presuppositions can make good supplements, there are good supplements that do not make good informative presuppositions.

8.3   *Remaining questions*

Our discussion leaves two important questions open: (i) Are there additional pragmatic constraints on the licensing of supplements? In Appendix III, we discuss a relevance

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[36] A conceivable reason for the contrast is that a performative expression must be presented as making a non-trivial contribution. In addition, matrix ARCs can perform speech acts (see McCawley 1981).

constraint suggested by Marty 2021, but we argue that it also applies to informative presuppositions. (ii) What explains the discourse status of supplements, i.e the fact that, in discourses such as (64), *No* often fails to target the content of the supplement? We suggest in Appendix III that this too might follow (with auxiliary assumptions) from our pragmatic account.

(64) Lance, who is a cancer survivor, won the Tour de France. –No!

9   Conclusion

9.1   Results

We have argued that the behavior of ARCs should be explained by three modules. Their *syntax* should be analyzed along the lines of McCawley's proposal, but in a liberalized form: while ARCs often prefer to be attached to the root node, they may (more or less easily) attach to any propositional node that dominates their DP associate (there might be independent evidence for such a mechanism in ASL). This predicts cases of narrow and intermediate scope that are not correctly handled by Potts's bidimensional theory (we argue in Appendix IV that they also cause problems for AnderBois et al.'s (2013) important account). The *semantic contribution* of an ARC gets conjoined to the propositional node its attaches to. This immediately predicts scopal interactions between ARCS and operators (see Appendix IV for further interactions discussed by AnderBois et al. 2013). Finally, the *pragmatics* requires that ARCs make a non-trivial contribution (as in Potts 2005); but also that one can easily accommodate assumptions in the global context that make the content of ARCs locally trivial. For narrow scope ARCs, this yields weakened projection patterns reminiscent of presuppositions.

9.2   Open questions

This study leaves several questions open. First, there is enough variation across consultants that an experimental investigation of the data would be warranted. There

are so many relevant data points that this will probably require several very careful studies. Relatedly, even our small-scale surveys reveal important cross-individual variation, particularly in French, with some consultants allowing for multiple instances of narrow scope ARCs, while others are far more restrictive. These might be genuine cases of dialectal variation, which might have to be investigated as such.

On a theoretical level, each module of the analysis will require more work. Concerning the syntax: we have been non-committal as to *how* ARCs could be attached *in situ* at various propositional points. Thus we haven't added anything to McCawley's syntactic analysis besides liberalizing it (by adding further points of attachment). Future research should ask whether our liberalized McCawley analysis can be integrated to recent theories of multidominance (e.g. de Vries 2013, Bachrach and Katzir 2009).

Concerning the semantics: we have not attempted to be precise about the resolution of the denotation of the *wh*-pronoun, taking it to have some of the readings (referential, E-type) of standard pronouns, *modulo* the assumption that it must depend on its DP associate; this would need to be formally implemented. Concerning the pragmatics: what it means for an assumption to be 'easy' to accommodate was left open, although a connection with informative presuppositions provides useful constraints.

There are more specific issues to be addressed as well.

(i) We have not provided a theory of attachment preferences for ARCs: we noted that they prefer to attach to root nodes, but why this is is unclear. Jasinskaja and Poschmann 2018 offer a promising analysis in terms of discourse relations.

(ii) As discussed in Section 2.4, certain discourse relations make narrow scope easier than others; see Poschmann 2018 and Jasinskaja and Poschmann 2018 for an analysis.

(iii) While some ARCs can take scope under some operators, such as *if*-clauses (as

discussed above), it seems very difficult for ARCs to take scope under negative expressions, as illustrated in (65)b; this has yet to be explained.

(65) a. One of these women helped her son, which saved him.

　　b. #None of these women helped her son, which saved him.

More generally, we have provided an 'existence proof' that, for several consultants in French and in English (as well as for Poschmann's German-speaking subjects), ARCs can take narrow scope relative to diverse operators. But we have not claimed that ARCs can *always* take narrow scope with respect to operators, as this would seem to be incorrect. A typology and theory of embedding possibilities remains to be developed.

 (iv) As discussed in Koev 2012, the position of ARCs in a sentence or in a clause matters to their semantic and pragmatic behavior: clause-final ARCs are more easily interpreted as being at-issue than other ARCs. We have not explained this fact.

(v) Despite our efforts, the correlation between height of attachment and ellipsis resolution can still be given two types of analysis: a syntactic one, within a liberalized McCawley theory; or a semantic one, whereby some narrow scope ARCs are copied by ellipsis because they make an at-issue contribution (and not because they are low in the syntactic structure). It would be important to provide systematic tests with ARCs that are is attached low but clearly make non-at-issue contributions.

(vi) Finally, throughout our investigation we have presented contrasts between clausal parentheticals, which only take matrix scope, and ARCs, which need not. But how should clausal parentheticals be analyzed? A semantic direction could make use of Pottsian ideas to make these parentheticals 'scopeless'. Alternatively, one might use a (non-liberalized) McCawley analysis in which clausal parentheticals are syntactically attached at the matrix level (and no lower). An investigation is left for future research.

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Appendix I. Additional data on French ARCs

We provide below additional French data that are only summarized in the main text.

❑ *More narrow scope ARCs*

We discussed in (12) a case of modally interpreted imperfect. Another one appears in (66), with a sharp split between 4 consultants who accept and 4 consultants who reject (66)a, as shown in (67).

(66) *Context:* A new channel has obtained the name of a French spy in Pakistan, Martin. What follows is uttered by a journalist working for this channel:

Si demain nous décidions   de publier le   nom de Martin ___
*If tomorrow we decided   to publish the name of Martin ____*

nous   aurions un   sacré   problème.
we   would-have   a   serious problem.

'If tomorrow we decided to publish Martin's name ___ we would have a serious problem.'

Target inference: if tomorrow we decided to publish Martin's name, he would then be executed.

Construction filling ___ (survey with 8 consultants)	Acceptability (7 = best)	Inferential strength (7 = strongest)
a. , qui était alors exécuté, *, who was then executed,*	4.1	2.4
b. (il était alors exécuté), *(he was then executed),*	1.5	1.5
c. et qu'il était alors exécuté, *and that he was then executed,*	7.0	2.3
d. , qui serait alors exécuté, *, who would-be then executed,*	7.0	6.8
e. (il serait alors exécuté), *(he would-be then executed),*	5.9	6.5

(67) Distribution of acceptability scores for (66)a

, qui était alors exécuté,

8 responses
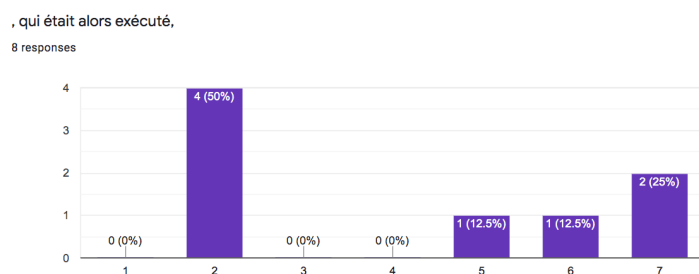
We also sought to use the subjunctive to force narrow scope readings, as shown in (68) (we gloss the subjunctive with *subj*). The subjunctive parenthetical in (68)b is

sharply degraded, and the target subjunctive appositive in (68) is far more acceptable, but with great variation across consultants, as shown in (69): 5 accept it, 3 reject it. The target inference is more strongly endorsed in the narrow scope appositive in (68)a than in the conjunctive control in (68)c. The conditional appositive and parenthetical in (68)d,e give rise to lower endorsement of the target inference that in analogous cases in English, possibly due to a reportative reading of the conditional (the conditional can be used in French with a meaning akin to: 'according to people…').

(68) *Context:* There was a grave problem at school, involving a student, Jean.

Il est possible   que Jean ait   appelé sa mère ___
It is possible   that Jean has-subj   called his mother ____

'It is possible that Jean called his mother ___ '

Target inference: If Jean called his mother, she then called her lawyer.

Construction filling ___ (survey with 8 consultants)	Acceptability	Inferential strength
a. , qui ait alors appelé son avocat. *, who has-subj then called her lawyer.*	4.4	4.0
b. (elle ait alors appelé son avocat). *(she has-subj then called her lawyer).*	1.1	2.4
c. et qu'elle ait alors appelé son avocat. *and that she has-subj then called her lawyer.*	7.0	4.3
d. , qui aurait alors appelé son avocat. *, who would-have then called her lawyer.*	6.4	4.4
e. (elle aurait alors appelé son avocat). *(she would-have then called her lawyer).*	6.9	4.9

(69) Distribution of acceptability scores for (68)a

, qui ait alors appelé son avocat.

8 responses
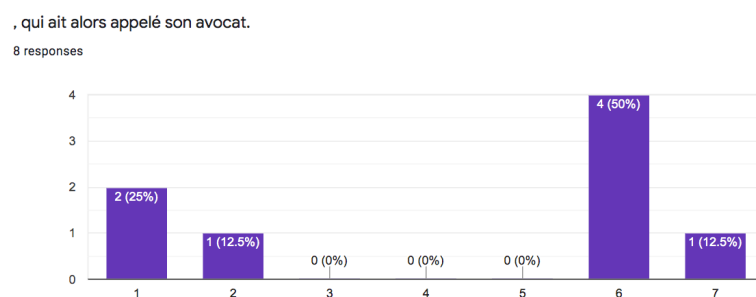
❑ *An intermediate scope appositive in the subjunctive*

The following paradigm attempted to use the subjunctive to force intermediate scope of an appositive. Average acceptability for the target narrow scope ARC in (70)a is rather degraded, although less so than a subjunctive parenthetical (in (70)b). But a seen in (71), for (70)a there is again a split between 3 consultants who accept it, 4 who reject it, and 1 consultant with intermediate acceptability.

(70) *Context:* There was a coronavirus case in the lab, and the Director seems to be furious. I formulate a hypothesis:

Il	est	concevable	que personne	ne	se	soit	demandé
it	*is*	*conceivable*	*that nobody*	*NE*	*SE*	*be-subj*	*wonder*

s'il	fallait	prévenir	la	Directrice	____ .
if it	*had-to*	*warn*	*the-fem*	*Director-fem*	*____*

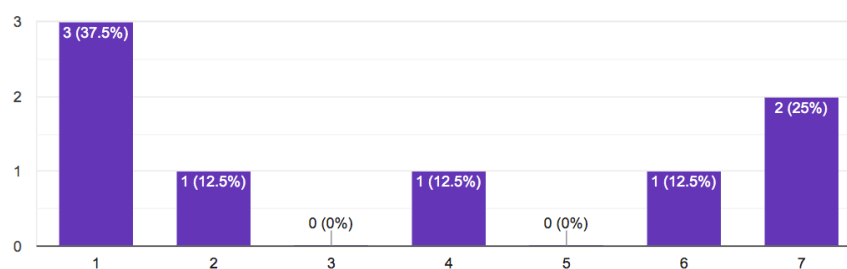'It conceivable that nobody wondered whether to call the Director ___ '

Target inference: If nobody had wondered whether one had to inform the Director, she would have been greatly shocked (by this).[37]

Construction filling ___ (survey with 8 consultants)	Acceptability	Inferential strength
a. , qui en ait été extrêmement choquée. *, who of-it has-subj been extremely shocked.* , who was extremely shocked by this.	3.6	2.8
b. (elle en ait été extrêmement choquée). *(she of-it has-subj been extremely shocked).*	1.9	1.9
c. et qu'elle en ait été extrêmement choquée. *and that she of-it has-subj been extremely shocked.* and that she was extremely shocked by this.	7.0	3.5
d. , qui en aurait été extrêmement choquée. *, who of-it would-have been extremely shocked.* , who would have been extremely shocked by this.	6.8	4.5
e. (elle en aurait été extrêmement choquée). *(she of-it would-have been extremely shocked).* (she would have been extremely shocked by this).	6.1	4.1

(71) Distribution of acceptability scores for (70)a

, qui en ait été extrêmement choquée.

8 responses

Appendix II. Additional properties of English ARCs

❏ *Discourse status of supplements*

In discourse, supplements often fail to be targeted by denials, as illustrated in (64) in the text, copied as (72), which denies that Lance won the Tour de France but grants that he survived cancer .

(72) Lance, who is a cancer survivor, won the Tour de France. –No!

Our analysis requires that it should 'easy' to add to the context C an assumption A (whose meaning we write as *A*) to obtain a context C⁺ from which it follows that Lance is a cancer survivor. In many cases, this might be because the probability of A relative to C is high enough (in other words: A doesn't follow from C, for otherwise the ARC would be trivial; but A is fairly likely given C, which makes it easy to accommodate A and thus to make the ARC locally trivial). When this happens, the probability of the ARC (= Lance's being a cancer survivor) relative to the initial context is high, and the probability of its negation is low.
This reasoning is summarized in probabilistic terms in (73).

(73) a. By Translucency, for C⁺ = C ∩ **A**, C⁺ |= Lance is a cancer surivor.
b. By a., C |= [A => Lance is a cancer survivor],
and hence: C |= [not (Lance is a cancer survivor) => not A]
c. Let ε be such that the conditional probability of A relative to C is above 1-ε:
Proba(A | C) > 1-ε. Since C |= [A => Lance is a cancer survivor], Proba(Lance is a cancer survivor | C) ≥ Proba(A | C) > 1-ε, and thus Proba(not [Lance is a cancer survivor] | C) ≤ ε.

The result makes it plausible that the addressee denied the speaker's utterance because of its at-issue component rather than because of the ARC, since the probability that the ARC is false is low (as indicated by: Proba(not [Lance is a cancer survivor] | C) ≤ ε).
While this is not at all the final word on the discourse status of ARCs, this suggests that there is a connection between *Translucency* and the fact that ARCs are not easily targeted by negation in discourse.[38]

❏ *The importance of relevance (Marty 2021)*

Marty 2021 criticizes an earlier version of the analysis in (39), one in which condition (39)b (= ease of accommodation) reduces to the fact that the necessary assumptions aren't too surprising. Marty argues that this is incorrect: an ARC may or may not be acceptable depending on its relevance to the rest of the discourse.

(74) a. #Bill, who has thirteen fingers, speaks faster than anybody else.
b. Bill, who has thirteen fingers, plays arpeggios faster than anybody else.

---

[38] To have a more complete analysis, we would need to *compare* the probability that the ARC is false to the probability that the at-issue content is false. We leave this issue for future research.

(75) a. #Sue, who has just won a huge lottery jackpot, was born in 1985.
　　　b. Sue, who has just won a huge lottery jackpot, bought a $10 million yacht.

Marty 2021 discusses two possible analyses. On one, the rest of the sentence (not just the beginning) can be taken into account when determining if an ARC is 'unsurprising'. On the other, the contribution of an ARC "should be relevant yet less critical to the conversation than the contribution of the sentence in which it appears".

　　　Let us grant the validity of Marty's remarks (we agree with his judgments, although our own attempt at eliciting these contrasts failed, possibly due to minor changes we made to (74)[39]). Our main point is that Marty's data have counterparts with informative presuppositions triggered by redundant modifiers of definite descriptions, as is shown by the following examples due to Leffel (2014):[40]

(76) a. I have to go take care of my sick wife.
　　　b. ≈ My wife is sick, so/therefore I have to go take care of her.
　　　a'. #I have to go take care of my tall wife.
　　　b'. #≈ My wife is tall, so/therefore I have to go take care of her. (Leffel 2014 p. 77)

(77) a. Can you believe it—the black president gave a racist speech!
　　　b. ≈ The president's blackness makes it surprising that he would give a racist speech.
　　　a'. #Can you believe it—the tall president gave a racist speech!
　　　b.' #≈ The president's height makes it surprising that he would give a racist speech.
　　　(expanded from Isabelle Charnavel's p.c. to Leffel; Leffel 2014 p. 77)

　　　In addition, it is worth asking whether relevance is enough to justify an ARC. First, it is not clear at all that the projection data we discussed in Section 7 follow from a 'relevance only' theory. Second, there might be cases in which, keeping relevance constant, ease of accommodation matters in its own right. Some speakers thus display a preference for (78)a over (78)b; the same contrasts hold (more strongly) with informative presuppositions, as in (78)c and (78)d. Relevance doesn't suffice to explain the contrast: being talented is clearly relevant to winning, but (78)b is still a bit degraded.

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[39] Our failed attempt to elicit these contrasts is given in (i); it failed equally for appositives and for redundant modifiers of definite descriptions.

(i) *Context:* I am discussing my family members with a friend:
　　　a. $^{6.5}$ My father, who has 6 fingers, speaks faster than anybody else.
　　　b. $^{7.0}$ My father, who has 6 fingers, plays arpeggios faster than anybody else.
　　　c. $^{6.5}$ My 6-fingered father speaks faster than anybody else.
　　　d. $^{6.9}$ My 6-fingered father plays arpeggios faster than anybody else.
(Survey B, 8 consultants)

[40] While we have not formally tested these examples, we believe that Leffel's contrasts in (76)-(77) can be replicated with ARCs in (i)-(ii) (this contrast was confirmed by one of our consultants):
(i)　　　a. I have to go take care of my wife, who is sick.
　　　　　b. ?I have to take care of my wife, who is tall.

(ii)　　　a. Can you believe it – the President, who is black, just gave a racist speech!
　　　　　b. ?Can you believe it – the President, who is tall, just gave a racist speech!

(78) *Context:* Television viewers are anxiously awaiting the result of the World Cup final
      (they have not been announced yet). The TV anchor says:
      a. [7.0] The German team, which is extraordinarily talented, has just won.
      b. [5.8] The German team, which has just won, is extraordinarily talented.
      c. [6.9] The extraordinarily talented German team has just won.
      d. [4.4] The winning German team is extraordinarily talented.
      (Survey B, 8 consultants)

❑ *The Proviso Problem in presuppositions and supplements*

Another important issue should be kept in mind. In several cases in which dynamic
semantics and related frameworks predict conditional presuppositions, unconditional
ones are in fact obtained. This problem was dubbed by Geurts (1996, 1999) the 'Proviso
Problem'. It arises in some environments but not others, as shown by the contrast
between (79)a, which displays the conditional presupposition predicted by dynamic
semantics, and (79)b, which typically yields a stronger (unconditional) inference.

(79) a. Peter knows that if the problem was easy / difficult, someone solved it. (Geurts 1999)
         ≠> someone solved the problem
     b. If the problem was easy / difficult, then it isn't John who solved it. (Geurts 1999)
        => someone solved the problem

Several theories have been entertained to explain this contrast; we will not review them
here (see Geurts 1999 for a survey within Discourse Representation Theory, and
Schlenker 2011a,b and Lassiter 2012 for some references to analyses broadly
compatible with dynamic semantics, as well as Mandelkern 2016 and Mandelkern and
Rothschild 2019 for relevant critiques). In addition, within contexts that sometimes give
rise to strengthening, the content of the relevant constructions matters: strengthening is
weakened or obviated when there is a clear probabilistic relationship between the *if*-
clause and the presupposition, as in (80):[41]

(80) If this applicant is 64 years old, does he know that we cannot hire him?
     => if this applicant is 64 years old, we cannot hire him
     ≠> we cannot hire this applicant (Schlenker 2011a)

     An important question is whether a Proviso Problem arises with ARCs.[42] Based

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[41] Lassiter 2012 derives this generalization on the basis of a probabilistic semantics (but see Mandelkern
and Rothschild). Geurts's example (79)b with 'easy' was designed to show that this isn't all that's going
on.

[42] Koev 2015 argues that there is an *anti*-proviso problem for supplements because (i) yields a conditional
rather than an unconditionalized inference:

(i) If Jack buys a car, which will probably be a Volvo, his wife will be upset.
At-issue content: If Jack buys a car, his wife will be upset.
Projective inference: If Jack buys a car, it will probably be a Volvo. (Koev 2015)

We agree with the facts but think they should be analyzed differently. The appositive is attached above
the *if*-clause, as is likely mandated by the fact that *will* is deviant in the scope of an *if*-clause. (i) should
thus be compared with the examples in (ii):

on the belief that this is in fact the case, we constructed in (81) a paradigm that minimally differs from (49). In the latter case, there was a clear connection between the big event taking place on Wednesday and DSK meeting with the judge the day before. In (81), the connection between the antecedent of the conditional and the appositive is much weaker, which might lead one to expect a strengthening of the unconditional inference. For our consultants, there is an effect, but a weak one: the unconditional inference (= Inference 1) is more strongly endorsed in (81)a than in (49)a, and the conditional inference (= Inference 2) is less strongly endorsed (possibly because it comes with an implicature that the corresponding unconditional inference isn't known to hold, as is standard). But these effects are too weak to warrant a forceful conclusion, and thus we can only state as a conjecture that a Proviso Problem will arise with narrow scope appositives.[43]

(ii)   a. If Jack buys a car (<u>it will probably be a Volvo</u>), his wife will be upset.
          b. If Jack buys a car, his wife will be upset. <u>His car/It will probably be a Volvo</u>.

The examples in (ii) involve modal subordination: what is asserted by the underlined clause is that *if Jack buys a car,* his car will be a Volvo. No supplement projection is needed to get this effect, and thus no anti-proviso problem is seen (note that strengthening would make little sense anyway since the relevant car is not asserted to exist in the actual world but just in some epistemically accessible worlds).
[43] Three points should be added about the general argumentation pertaining to narrow scope ARCs in this piece.
1. Sequence of Tense: For reasons of space and time (as the data are complex), we did not investigate an argument for narrow scope ARCs that could be constructed on the basis of Sequence of Tense rules, i.e. cases in which the temporal specifications of a past tense embedded under another past tense remain uninterpreted. A typical example (without an ARC) appears in (i), where the time of the lunch and of the telling is tomorrow, and thus the underlined past tense remains uninterpreted.

(i) John decided yesterday that tomorrow he would tell his mother over lunch that they <u>were</u> having their last meal together. (slightly modified from Abusch 1997)

It is usually thought that the possibility of disregarding past tense for interpretive purposes only arises under embedding in the scope of an appropriate operator (typically, another past tense). This makes it possible to construct a further putative argument that some appositives take narrow scope. A potential example appears in (ii). The underlined past tense is odd in (ii)b, presumably because the parenthetical can only take matrix scope; the time of Ann's presence in Vegas is tomorrow, and therefore an interpreted past tense is deviant to refer to that future moment. By contrast, (ii)a is more acceptable, which suggests that tense deletion can apply. But testing these facts systematically would require another survey (see Koev 2018, fn. 27, for doubts about such data).

(ii) *Situation:* John is in London and he is about to go to Vegas to meet his girlfriend Ann. He is planning to marry her there but his parents don't know it.
John decided yesterday that tomorrow he would call his parents from Vegas to tell them that he had just married Ann
a. ok? , who <u>was</u> there with him.
b. #(she <u>was</u> there with him).

2. English subjunctive: One could seek to investigate the behavior of the English subjunctive, exemplified in (iii). Two consultants we asked a long time ago gave conflicting judgments on the acceptability of this sentence.

(iii) *Context:* A news channel has information about the identity of an American spy in Pakistan, Smith. The following is uttered by a journalist working for that channel:

(81) *Context:* DSK is being sued, but his lawyers might not be entirely competent.

If DSK is nearing bankruptcy, it could conceivably turn out next Tuesday that his lawyers _____ are dropping their fees.

Construction filling ___ (survey B, 8 consultants; *5 found a. at least 2 points better than b; average scores for these consultants are italicized*)	Acceptability	Inference 1: DSK's lawyers will bungle his plea bargain next Monday	Inference 2: If DSK is nearing bankruptcy, his lawyers will bungle his plea bargain next Monday
a. , who bungled his plea bargain the day before,	5.8 *5.6*	**4.8** ***4.4***	**3.8** ***3.6***
b. (they bungled his plea bargain the day before)	3.4 *2.0*	4.8 *4.2*	3.9 *3.6*
c. (they will have bungled his plea bargain the day before)	6.6 *6.6*	5.4 *5.2*	5.5 *6.2*
d. bungled his plea bargain the day before and	7.0 *7.0*	1.6 *1.6*	2.1 *1.6*

If tomorrow we published information about Smith, who were killed (or: who were to get killed) as a result, we could kiss our jobs goodbye.

3. Attitude verbs: Attitude verbs might be useful to construct examples in which a narrow scope ARC makes a non-at-issue contribution to a reported speech act. One could for instance investigate examples such as (iv):

(iv) Joe Biden hasn't selected a running mate yet, but he is expected to choose a woman. Right before the election, he will certainly say that his running mate, who brought an important female perspective to his campaign, would make a fantastic Vice President. Donald Trump will too.

The underlined ARC ought to be read with narrow scope relative to the future tense and plausibly relative to the attitude verb as well. If so, one would expect that it has no choice but to be copied in the course of ellipsis resolution, which should yield an odd reading on which Mike Pence brought a female perspective to Donald Trump's campaign. As in other cases, an important issue is whether a control parenthetical (= *(she brought an important female perspective to his campaign)*) is sufficiently deviant to exclude the possibility that perspectival shift is responsible for the reading obtained in (iv).

Appendix III. Non-local attachment of clauses: data from ASL (Schlenker 2021b)

We provide further details about the results on ASL summarized in Section 6.[44]

❑ *Methods*

On an empirical level, the judgments were obtained from one long-term native ASL consultant. Quantitative acceptability and inferential judgments were obtained by the 'playback method', whereby minimal pairs are signed on a video and assessed contrastively, with iterations of the task on other days to assess the stability of the judgments. There were at least three data points for each judgment, and results seemed very stable for the consultant (needless to say, it would be good to assess these data with further consultants in the future).

❑ *Narrow, intermediate and matrix attachment*

For perspicuity, we repeat from the main text the schematic form of the target sentences:

(82) a.   RS$_i$ _____
              ^ _____
        … SAY IF Clause-1   **Clause-2**   & Clause-3, …

    b.   RS$_i$ _____
              ^ _____ ~ _____ ^ _____
        … SAY IF Clause-1   **Clause-2**   & Clause-3, …

    c .   RS$_i$ _____   RS$_i$ _____
              ^ _____ ~ _____ ^ _____
        … SAY IF Clause-1   **Clause-2**   & Clause-3, …

       The simplest paradigm is introduced in (83), with Clause-2 corresponding to *PEOPLE LIKE IX-a,* where *IX-a* denotes John. Schlenker 2021b notes that this is a fully normal (but possibly parenthetical) clause, and certainly not a restrictive relative clause, which would not be expected to modify a proper name. We include with the paradigm the strength of crucial inferences, assessed by way of the questions in (84). These were designed to determine whether Clause-2 is interpreted (i) outside the *IF*-clause but within the scope of the attitude verb, or (ii) outside the scope of the attitude verb (and thus also outside the *IF*-clause).

(83)   *Context:* There is a research competition by pairs.

        ANN$_b$ b-TELL-1
        'Ann tells me that
              RS$_b$ _____
              ^ _____ ^ _____   ^ _____
    a. [7]   IF IX-1 WORK WITH JOHN$_a$ PEOPLE LIKE IX-a PLUS   GOOD INTERACTION
            if she works with John, people like him, and there is a good interaction

              RS$_b$ _____
              ^ _____ ~ _____   ^ _____
    b. [7]   IF IX-1 WORK WITH JOHN$_a$ PEOPLE LIKE IX-a   PLUS   GOOD INTERACTION
            if she works with John (she says that people like him) and there is a good interaction

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[44] This Appendix closely follows Sections 3.1 and 3.2 of Schlenker 2021b.

```
           RS_b_____                    RS_b_____
           ^_____ ~_____   ^_____
  c. 5.7   [IF IX-1 WORK WITH JOHN_a][INFORM-2 PEOPLE LIKE IX-a][PLUS    GOOD INTERACTION]
           if she works with John (I inform you that people like him) and there is a good interaction
```

```
_____RS_b
```

IX-1 WILL WIN.
she will win.' (ASL 35, 0462, 3 judgments)

Inferential judgments:	John is in fact popular	Ann thinks that John is popular
a.	1	2.3
b.	1	**6.7**
c.	**6.3**	1.7

(84) Do you derive the inference that (i) John is in fact popular? (ii) Ann thinks that
John is popular? (Indicate with which strength you derive the relevant inference:
1 = no inference; 7 = strongest inference)

In (83)a, Clause-2 is signed under Role Shift and with Brow Raise associated with the
IF-clause. We thus expect that the clause is interpreted as a conjunct in the scope of
both operators; this explains why we neither obtain the inference that John is popular
nor that Ann believes that he is. In (83)b, Clause-2 is exempted from Brow Raise and
hence from the *IF*-clause, but not from Role Shift, and we obtain the inference that Ann
thinks that John is smart. In (83)c, Clause-2 is exempted both from Role Shift and from
Brow Raise, and we obtain the inference that John is in fact smart.

❑ *Correlation with ellipsis*

Schlenker 2021b makes use of the liberalized version of McCawley's theory discussed
in the present piece, and derives the predictions in (85); they mirror the discussion of
Section 4.2 above.

(85) **Predictions about ellipsis**
In the following configuration (with or without Role Shift under *SAY*),

 … [SAY   IF Clause-1 **Clause-2** & Clause-3], …

if the constituent that includes both *SAY* and the embedded clause is elided, then:
Clause-2 can fail to be copied under ellipsis when it is attached above *SAY*;
Clause-2 must be copied under ellipsis when it is attached under *SAY* (including when it
is attached above the *IF*-clause).

In McCawley's paradigm in (19)a there was little doubt that the word *which* had to be
bound locally, since non-relative pronouns never have non-local readings. But the ASL
paradigms involves full clauses, not ARCs. As a result, the pronoun *IX-a* in Clause-2
could have a strict or a bound variable reading. On the bound variable reading, copying
Clause-2 (i.e. *PEOPLE LIKE IX-a*) with matrix scope would indeed be expected to
have a semantic effect on the elided clause. But on the strict reading, copying Clause-

2 would yield an effect that is redundant with the antecedent clause, and hence it would be undetectable by inferential means. Schlenker 2021b thus focuses on a construction, involving an ASL version of *his field*, which can be independently determined to strongly prefer a bound variable reading.

CONTINUE HERE The main result is that the predictions in (85) are borne out: Clause-2 can be disregarded under ellipsis when it is attached above *SAY*, but not when it is attached under *SAY*. Specifically, in the paradigm in (86), when Clause-2 has intermediate scope (in (86)b), it yields a strong inference that the linguistics professor thinks that linguistics is a reasonable field, and also that the economics professor thinks that economics is a reasonable field. This is expected on the assumption that (i) *FIELD* is understood with a bound reading, and (ii) Clause-2 is preserved under ellipsis. By contrast, when Clause-2 is attached above *SAY*, it yields the inference that linguistics is a reasonable field, and no inference that economics is a reasonable field. These conclusions are drawn on the basis of the inferential judgments in (87) and of the inferential ratings reported in the tables after (86).

(86)   *Context:* There is a science competition by pairs. The linguistics professor and the economics professor don't know each other.

              ^_____
TODAY   [LINGUISTICS PROFESSOR]ₐ WILL TELL-2
'Today the linguistics professor will tell you that

    RSₐ_____
    ^_____ ^_____   ^_____
a. $^{6.3}$ IF IX-2 WORK WITH IX-1, FIELD REASONABLE, PLUS GOOD INTERACTION, IX-2 WIN.
if you work with him, and the field [= linguistics] is reasonable, and there is a good interaction, you will win.

                   ^_____
TOMORROW   [ECONOMICS PROFESSOR]ᵦ WILL SAME.
Tomorrow, the economics professor will, too [= tell you that if you work with him, and the field [= economics] is reasonable, and there is a good interaction, you will win].'

    RSₐ_____
    ^_____ ~_____   ^_____
b. $^{6.3}$ IF IX-2 WORK WITH IX-1, FIELD REASONABLE, PLUS GOOD INTERACTION, IX-2 WIN.
if you work with him (he says the field [= linguistics] is reasonable) and there is a good interaction, you will win.

                ^_____
TOMORROW   [ECONOMICS PROFESSOR]ᵦ WILL SAME.
Tomorrow the economics professor will, too [= tell you that if you work with him (he says the field [= economics] is reasonable) and there is a good interaction, you will win].'

    RSₐ_____   RSₐ_____
    ^_____ ~_____   ^_____
c. $^{5.3}$ IF IX-2 WORK WITH IX-1, FIELD REASONABLE^{45}, PLUS   GOOD INTERACTION, IX-2 WIN.
if you work with him (the field [= linguistics] is reasonable) and there is a good interaction, you will win.

                ^_____
TOMORROW   [ECONOMICS PROFESSOR]ᵦ WILL SAME.
Tomorrow the economics professor will, too [= tell you that if you work with him and there is a good interaction, you will win].'
(ASL, 35, 0574; 3 judgments)

Inferential judgments 1 (Antecedent clause):	Wide scope Linguistics is a reasonable field	Narrow scope - matched The linguistics professor thinks/says that linguistics is a reasonable field	Narrow scope - mismatched The linguistics professor thinks/says that economics is a reasonable field
a.	1.3	2.7	1

---

^{45} As our consultant mentioned upon checking the transcriptions, *FIELD REASONABLE* is signed closer to locus *b* than to a neutral locus.

b.	2.3	**6.3**	1
c.	**6**	3	1

Inferential judgments 2 (Elided clause):	**Wide scope** Economics is a reasonable field	**Narrow scope - matched** The economics professor thinks/says that economics is a reasonable field	**Narrow scope - mismatched** The economics professor thinks/says that linguistics is a reasonable field
a.	1	1.3	1
b.	1.7	**6**	1
c.	1.3	1.7	1

(87) Inferential questions for (86)

Meaning1: Do you derive the inference that (i) linguistics is a reasonable field? (ii) the linguistics professor thinks/says that linguistics is a reasonable field? (iii) the linguistics professor thinks/says that economics is a reasonable field? (Indicate with which strength you derive the relevant inference: 1 = no inference; 7 = strongest inference)

Meaning2: Do you derive the inference that (i) economics is a reasonable field? (ii) the economics professor thinks/says that economics is a reasonable field? (iii) the economics professor thinks/says that linguistics is a reasonable field? (Indicate with which strength you derive the relevant inference: 1 = no inference; 7 = strongest inference)

As mentioned, similar results are obtained when Role Shift is replaced with normal indirect discourse.

Appendix IV. Comparison with appositive impositions (AnderBois et al. 2010, 2013)[46]

❑ *Appositive impositions*

Potts's bidimensional theory was intended to make it impossible for the supplemental dimension to feed into the at-issue dimension. But AnderBois et al. 2010, 2013 display a variety of phenomena that 'cross' the supplemental/at-issue boundary:

(88) a. John, who saw Mary, saw Susan.
     a'. John saw Susan. He saw Mary.
     b. Mary courts a semanticist at every conference party, where she always dances with him.
     b'. Mary courts a semanticist at every conference. She always dances with him.

In (88)a, the presupposition triggered by the particle *too* is satisfied by the content of the appositive clause. Similarly, in (88)b the pronoun *him* can only be interpreted by reference to the quantificational dependency introduced in the appositive clause. These initial cases are not a problem for our general analysis because our semantics treats ARCs as conjuncts (although their syntax and pragmatics is very different from that of conjuncts). But this raises the question how our account compares to AnderBois et al.'s.

     In dynamic semantics, a presupposition must be entailed by its local context, determined by combining the context of the conversation with the linguistic environment preceding the presupposition trigger, as we saw in Section 7. AnderBois et al. 2010, 2013 take ARCs to make direct 'impositions' on the context set (without the intermediary of local contexts). They thus remain in the spirit of a 'wide scope' analysis of supplements. But they take these impositions to interact freely with 'assertions' by way of Logical Forms that represent the context set and the assertive proposal as distinct propositional variables: p^{cs} for the context set, and p for the assertive proposal.

     An example that interleaves constraints on the context set and on the assertive proposal is given in (89), with the logical analysis in (90).

(89) John^x, who nearly killed a^y woman with his$_x$ car, visited her$_y$ in the hospital.

(90) Logical analysis of (89) for AnderBois et al. 2013
     a. **New proposal**: $[p] \wedge p \subseteq p^{cs} \wedge$
     b. **Issue**: $[x] \wedge x = \text{JOHN} \wedge$
     c. **Appositive**: $[y] \wedge \text{WOMAN}_{p^{cs}}(y) \wedge \text{NEARLY-KILL}_{p^{cs}}(x, y) \wedge$
     d. **Issue**: $\text{VISIT}_p(x, y) \wedge$
     e. **Proposal accepted**: $[p^{cs}] \wedge p^{cs} = p$

New discourse referents (variables) are introduced by way of the notation *[p]* (propositional variable) and *[x]* (individual variable). Thus (90)a introduces the propositional variable *p*, corresponding to the assertive proposal, and constrained to refer to worlds within the context set (hence $p \subseteq p^{cs}$). (90)b introduces the new variable *x* whose value is John, (90)c contributes an appositive update that specifies that x nearly killed a woman y; the fact that it is appositive is reflected in the use of the p^{cs} variable in *WOMAN$_{p^{cs}}$ (x, y)* and *NEARLY-KILL$_{p^{cs}}$(x, y)*. By contrast, (90)d contributes an at-

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[46] This summary of AnderBois et al. 2013 closely follows that in Schlenker 2021a.

issue update that x visited y: this is why *p* appears as a subscript on *VISIT$_p$(x, y)*. Importantly, the same individual variable can appear in formulas that carry different propositional variables: *x* appears both in (90)c and in (90)d. This yields the desired anaphoric link between the supplemental and the assertive dimensions.

On the compositional side, AnderBois et al. 2010, 2013 set up a dynamic semantics that distinguishes between a version of Potts's two dimensions, *while allowing them to interact*. For individual variables, a dynamic system keeps track of *all their possible values* given the linguistic information available at a certain point in the computation of the meaning of a sentence. Applying the same recipe to the propositional variables p^{cs} and *p*, AnderBois et al.'s system also keeps track of all the possible values that are compatible with what is known at a certain stage of a semantic computation. Since any number of constraints could lead to a further restriction of the context set, they initially take the values of p^{cs} and *p* to be all the possible subsets of the initial context set, with the constraint that $p \subseteq p^{cs}$ (since the assertive proposal is supposed to further restrict the context set).

❑ *The challenge of narrow and intermediate scope readings*

AnderBois et al. wish to derive the result that supplements do not take scope under other operators, and thus they provide a dynamic analysis for negation that leaves the value of the context set variable p^{cs} unchanged, while affecting the value of the at-issue variable *p*. While this might be correct for negation (a point to which we return below), this is not in general adequate for other operators, since as we saw some appositives can take narrow or intermediate scope relative to a variety of operators.

As A. Brasoveanu (p.c.) notes, one may liberalize the theory to allow some ARCs to constrain the at-issue variable *p* rather than the context set variable p^{cs}. This would in effect yield an ambiguity theory of ARCs: some are appositive impositions, others are just at-issue. Furthermore, AnderBois et al. make use of several propositional variables (*p, p'*, …), so in principle one could even distinguish between narrow and intermediate scope readings by indexing ARCs with different propositional variables.

While the details would have to be explored in greater depth, we believe that this line of analysis raises two broad questions. First, if narrow and intermediate scope ARCs constrain at-issue propositional variables, why couldn't wide scope readings be analyzed by the same mechanism? This would remove the motivation for having distinguished appositive impositions in the first place. Second, if at least some narrow scope ARCs give rise to projection phenomena, taking them to make pure at-issue contributions won't suffice: a projection mechanism will have to be posited.

❑ *An objection from anaphora?*

It has been objected that (91), a more sophisticated variant of (90), raises problems for our analysis (we add to AnderBois et al.'s representation a trace coindexed with the indefinite, as in their more articulated logical formulas).

(91) [A man]^x, who$_x$ nearly killed [a woman]^y with his$_x$ car, t$_x$ visited her$_y$ in the hospital.

AnderBois et al. correctly allow the ARC and the rest of the sentence to have

interleaved anaphoric dependencies: *who*, construed as a donkey pronoun, is present in the ARC but is dependent on *a man*, which introduces a discourse referent in the at-issue dimension. Simultaneously, *a woman* introduces a discourse referent in the ARC, and it is retrieved by *her* in the at-issue dimension. Can our analysis match this result?

There are two possibilities: we can give the ARC matrix scope, or narrow scope relative to the indefinite. The first possibility raises non-trivial issues, as we would end up with a conjunction of *[A man]$_x$ visited her$_y$ in the hospital* and *who$_x$ nearly killed [a woman]^y with his$_x$ car*. The objection is that, in terms of dynamic semantics, neither order of computation should work: if we start with the main clause, as in (92)a, *her$_y$* comes before its indefinite antecedent *[a woman]^y*; if we start with the ARC, as in (92)b, it is the donkey pronoun *who$_x$* which comes before its indefinite antecedent *[A man]$_x$*.

(92)   Possible orders of dynamic update operations
    a. [[A man]$_x$ visited her$_y$ in the hospital] [who$_x$ nearly killed [a woman]^y with his$_x$ car]
    b. [who$_x$ nearly killed [a woman]^y with his$_x$ car] [[A man]$_x$ visited her$_y$ in the hospital]

This argument should be handled with care because there are in fact cases in which pronouns come before their antecedents in conjunctions, as in (93), from Geurts 1999; it is thus by no means clear that a pronoun must be processed 'after' its antecedent (this issue dovetails with debates about the nature of computation biases in the computation of presuppositions, which have been argued by some to be flexible [Chemla and Schlenker 2012], while others have disagreed [Mandelkern et al. 2020]).

(93)   I don't know what he$_i$ has on them them$_j$, but it seems that [one of the pupils]$_i$ is blackmailing [some of the teachers]$_j$.

Be that as it may, matrix attachment also raises an empirical worry: to our ear, (94) is far less acceptable than (91), which is not expected if an ARC with matrix attachment behaves like a parenthetical.

(94)   [A man]$_x$ (he$_x$ nearly killed [a woman]^y with his$_x$ car) visited her$_y$ in the hospital.

Importantly, our analysis is not faced with any problem if we posit that the ARC has narrow scope relative to the existential quantifier. Whether the latter is treated in dynamic terms (as introducing a discourse referent) or in quantificational terms, we get the structure in (95), where the ARC is conjoined with the complex predicate in the scope of *a man* . Here *who$_x$* is dependent on *[a man]^x* and is in its syntactic scope; *her$_y$* is dependent on *[a woman]^y* but appears in a conjunct that follows it.

(95)   [A man]^x, [[who$_x$ nearly killed [a woman]^y with his$_x$ car], [t$_x$ visited her$_y$ in the hospital].

❑ *Conclusion*

Stepping back, the present account shares with AnderBois et al.'s proposal the goal of explaining how at-issue and supplemental contributions can interact. But AnderBois et al. remain closer to Potts's intuition that there should be a principled separation between at-issue and supplemental contributions. As a result, while dimensions can interact for purposes of anaphora resolution and related phenomena (such as presupposition and

ellipsis resolution), in their 'official' proposal supplements cannot take narrow scope with respect to the operators considered by the authors. This is clearly too restrictive. Adding the possibility of narrow and intermediate scope reading raises the question (i) why something special must be said about wide scope readings, and (ii) how projection phenomena with narrow scope readings should be derived.

Supplementary Materials

All surveys were administered through Google Surveys, with consultants who are either linguists (usually semanticists) or very close to linguistics. There were two English surveys, with some consultants answering both; all English-speaking consultants are speakers of American English.

Survey A (English)

Survey: https://drive.google.com/file/d/12dCRubnbI13AI_G5MVqt_o9ljrGln7jK/view?usp=sharing

Results: https://drive.google.com/file/d/14cBJucqI_d_r2t2RWVoeDzj86cjq9xH2/view?usp=sharing

Survey B (English)

Survey: https://drive.google.com/file/d/1r4uGGhmxKxuLtRA1rRFRHKJu5tzZj8Kk/view?usp=sharing

Results: https://drive.google.com/file/d/1-OARLF1RY3wJX2Bf3yrV7TMNLl6C215_/view?usp=sharing
(the 2nd sheet computes averages pertaining to consultants for whom the target a-sentence (ARC) was at least 2 points more acceptable than the control b-sentence (parenthetical))

Note: Survey B was modified after 2 consultant responses to make formatting more user-friendly (with full repetitions of sentences in long paradigms)

French survey

Survey: https://drive.google.com/file/d/1A98W1S-ZD5R_NNdnCdpoFy99ErxeE_zU/view?usp=sharing

Results: https://drive.google.com/file/d/1SOx-SfVUOvzi0DO7Bj9YrIB0yjTGZ3dr/view?usp=sharing

Note: one French consultant had to re-enter his judgments a few days after taking the survey due to data loss on the author's part.