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THE SYNTAX AND SEMANTICS OF *AS*-PARENTHETICALS

ABSTRACT. This paper is a detailed investigation of the syntax and semantics of a single type of cross-linguistically common parenthetical expression, here dubbed *As*-parentheticals (e.g., *Ames,* as you know, *was a spy*). I show that a treatment of such clauses as adverbial modifiers combines with a motivated semantic analysis to account for a wide range of ambiguities concerning negation in particular, but also tense, modal, and adverbial operators. I provide a principled explanation for the impossibility of variable binding into, and extraction from, *As*-parentheticals, and argue that this construction yields novel support for the view (of Ladusaw 1992, and others) that negative DPs like *no one* are actually non-negated indefinites licensed by an abstract, clause-level negation. Overall, the analysis shows that parentheticals, in addition to being a rich source of puzzles in their own right, provide a useful probe into clause structure in general.

1. INTRODUCTION

Parentheticals, ubiquitous though they be, and absolutely vital to communication at all registers, have been sorely neglected by linguists, both traditional and modern. There are exceptions, among them Ross's (1973) work on what he dubbed *slifting*, Emonds's (1976, §2.9) general investigation, Culicover's (1980, 1992), Stowell's (1987), and Lapointe's (1991) work on the internal syntax of such clauses, and McCawley's (1982, 1987, 1989) attempts to tackle the issue of how such constituents should be represented, but little is currently known about the syntax and semantics of this class of constructions.

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This work is an attempt to begin to remedy the oversight by investigating, in detail, the syntax and semantics of one type of parenthetical expression, exemplified by the italicized material in (1).

(1)a. Ames, *as the FBI eventually discovered*, was a spy. 'CP-*As*'

b. Ames stole important documents, *as the FBI said he had*. 'Predicate-*As*'

c. The plums were delicious, *as were the durians*. 'Predicate-*As*'

I call these clauses *As*-parentheticals or *As*-clauses. But despite the informal and English-specific name, one of the findings of this study is that clauses of the type in (1) are extremely common cross-linguistically; English *As*-clauses are by no means parochial constructions. I present data from Danish, German, and Thai that display the interesting and important properties of the *As*-clauses in (1). Understanding the construction, then, has implications well beyond English.

I refer to the kind of *As*-clause in (1a) as 'CP-*As*', in light of the intuition that their gaps are clausal gaps. Similarly, (1b, c) involve 'Predicate-*As*'. But these labels are for expository purposes only. Among my central claims is that (1a–c) involve a single, flexibly-typed morpheme. In contrast, the *as* in (2), an adverbial-relativizer, *is* a fundamentally distinct beast from the *as* in (1).

(2) Jody speaks German as Klaus speaks English – with a foreigner's accent. 'Adjunct-*As*'

'Adjunct-*As*' occasionally intrudes on the discussion, but only for purposes of comparison. Despite similarities with the *As*-causes in (1), and despite the cross-linguistic tendency to employ the same(-sounding) word to head both Adjunct-*As* and Predicate-/CP-*As* clauses, the semantics of Adjunct-*As* are fundamentally distinct. More importantly, as I show in section 2.4, they are not even parentheticals.

The paper's basic layout is as follows: Section 2 concentrates on the syntax of *As*-parentheticals, addressing both their internal structure and the syntactic relationship they bear to the sentence or clause from which they obtain their interpretation. Section 3 shifts attention to semantics; I provide lexical denotations for *As*-type morphemes that capture directly the fact that they conventionally implicate the truth of their complement. Throughout, my semantic treatment is guided by the syntactic results of section 2. Section 4 is an advertisement for the analysis developed in the

previous sections. I present some puzzles concerning the interaction of *As*-clauses with negative, tense, and modal operators, prominent among them being the ambiguity of (3).

(3) Ames did not steal the documents, as the senators claimed.
   a. *As*-clause = the senators claimed that Ames did not steal the documents
   b. *As*-clause = the senators claimed that Ames stole the documents

In (3b), the *As*-clause's interpretation 'ignores' the negation in the initial declarative. The existence of this reading, alongside the 'negated' reading (3a), is a consequence of my treatment, as are a variety of intricate restrictions on its availability.

A major lesson of this work is that parentheticals are useful probes into clause structure in general. Study of the interactions between *As*-clauses and the material around them, in conjunction with the VP-Internal Subject Hypothesis, yields novel evidence for distinguishing negative morphemes from the locus of the semantic expression of negation (see section 4). Additionally, *As*-clauses reveal much about the conditions governing, among other things, Island extractions and variable binding (section 3.3.4).

Another important finding is that *As*-clauses adjoin like regular, non-parenthetical adverbials; structurally, the two classes of expression are indistinguishable. It is the semantics of *As*-clauses that is responsible for the impression that they are syntactically separate from, and not semantically integrated with, the linguistic material around them. Section 2.4 offers a preliminary suggestion that this is ultimately the explanation for their characteristic *comma intonation* (Emonds 1976, §II.9). It is important to stress, then, the following: on the present analysis, *As*-parentheticals require nothing nonstandard in the way of representations or semantic techniques; all the structures proposed here are linguistic trees in the sense of Partee et al. (1993, §18.3) and Rogers (1998, §3.2), and my semantic analysis is couched in a basic type-driven semantic framework.

2. (PURE) SYNTAX

This section is a close look at the syntax of *As*-parentheticals. In sections 2.1–2.2 I focus on the inner workings of *As*-clauses, motivating a movement analysis in which a null operator extracts to [Spec,CP]; *As*-morphemes are argued to be prepositions. Section 2.3 considers the syntactic relationship *As*-clauses bear to the material from which they ob-

tain their interpretation. My conclusion is that they adjoin in the manner of regular, non-parenthetical adverbial modifiers.

2.1. *A Movement Analysis*

A prominent feature of both Predicate- and CP-type *As*-clauses is their missing constituents, or gaps, seen clearly in the English examples in (1) above and the Thai and Danish examples in (4)–(5).

(4) THAI

a. T^{h}u?.rian ?a.roy yaaŋ t^{h}ii k^{h}onee.c^{h}ian laai k^{h}on
durians delicious, as C Asians many CLASS.
ruu __.
know __
Durians are delicious, as many Asians know.

b. Tam.ruat ca? cap Clyde yaaŋ t^{h}ii p^{h}uak.k^{h}aw k^{h}uan ca?
police will arrest Clyde as C they should will
t^{h}am __.
do __
The police will arrest Clyde, as they should.

(5) DANISH

a. Alger var spion, (ganske) som folketingsmedlemmerne
*Alger was spy (exactly) as parliament.members.*DEF
påstod __.
claimed __
Alger was a spy, (exactly) as the senators claimed.

b. Politiets Efterretningstjeneste er i hælene på Bugsy,
*police's investigation.service.*DEF *is in heels.*DEF *on Bugsy,*
som de burde være __.
as they should be __
The FBI is hot on Bugsy's heels, as they should be.

Two hypotheses about the nature of these gaps present themselves: either the structures involve movement of a (possibly null) element, or else they involve ellipsis. The goal of this section is to establish that the movement analysis is the correct one. In section 2.1.1, I compare *As*-clauses

with uncontroversial ellipsis cases, showing that *As*-clauses do not in general manifest properties typical of ellipsis. In sections 2.1.2–2.1.3, I present data from Syntactic Islands and (pseudo-) parasitic gaps that constitute positive evidence for movement. The issue of what actually extracts (whether *as* or a null element) is postponed until section 2.2.

2.1.1. *Contrasts with Ellipsis Structures*

If the gaps in *As*-clauses result from ellipsis (or deletion), then one would expect them to display standard properties of ellipsis sites. In particular, the gap in *As*-clauses should be able to find its antecedent in a non-local phrase, as ellipsis gaps commonly do. But this expectation is not borne out. The constituent that supplies the gap's interpretation must be the most local phrase of the appropriate type. The logic of this argument is supplied by the work of Williams (1977), Kennedy (1998, 1999, §2.4.3.2), and Kennedy and Merchant (2000, §2.1), who provide examples such as (6). In (6), the elided VP in the second sentence can be interpreted either locally, as in (6a), or non-locally, as in (6b). In practice, the choice of antecedents might be disambiguated by focus. (Elided material is crossed through.)

(6) The fact that Sue read the map carefully probably means that she stayed on the trails. But we aren't sure whether Chuck did [~~VP~~].

a. [~~VP~~] = stay on the trails

b. [~~VP~~] = read the map carefully

In contrast, the interpretation of the gap in a Predicate-*As*-clause is restricted to the most local phrase of the appropriate type:

(7) The fact that Sue read the map carefully probably means that she stayed on the trails, as did Chuck.

a. *As*-clause gap = stay on the trails

b. *As*-clause gap $\neq$ read the map carefully

The contrast between (6) and (7) motivates a fundamental distinction between the gap in *As*-clauses and the phenomenon of VP-ellipsis. The following pair of discourses suggests the same conclusion for CP-*As*:

(8) That space has four dimensions is widely known. They announced {it / that} earlier.

a. *it / that* = that space has four dimensions is widely known

b. *it / that* = space has four dimensions

(9) That space has four dimensions is widely known, as they announced.

a. *As*-clause gap = that space has four dimensions is widely known

b. *As*-clause gap ≠ space has four dimensions

While *it* and *that* are free to find their antecedents in the matrix subject, the *As*-clause gap cannot get its interpretation from this constituent (function). In (9), only the entire clause is a possible provider.

This stringent locality requirement holds even in languages in which the *As*-clause's gap can be filled by a proform. For example, the Danish VP-ellipsis case in (10), in which *det* is obligatory, allows for the same range of interpretations as its English translation in (6). But the minimally different *As*-clause case in (11) permits only the local interpretation, *det* or no *det*.

(10) Det faktum at Sue læste kortet så omhyggeligt betyder
*the fact that Sue read map.*DEF *so carefully means*
sikkert at hun holdt sig til stierne. Men vi er ikke
*probably that she held self to paths.*DEF. *But we are not*
sikre på at Chuck gjorde (det).
sure on that Chuck did (it)
The fact that Sue read the map carefully probably means that she stayed on the trails. But we aren't sure whether Chuck did it.

a. *det* = stay on the trails

b. *det* = read the map carefully

(11) Det faktum at Sue læste kortet så omhyggeligt betyder
*the fact that Sue read map.*DEF *so carefully means*
sikkert at hun holdt sig til stierne, som Chuck gjorde
*probably that she held self to paths.*DEF, *as Chuck did*
(det).
(it)

The fact that Sue read the map carefully probably means that she stayed on the trails, as did Chuck.

a. *As*-clause gap = stay on the trails

b. *As*-clause gap ≠ read the map carefully

The contrast between (10) and (11) suggests that *som*-clauses containing a proform in the ellipsis site are not instances of VP-proform anaphora. Danish CP-*As* cases show the same limitation. German *As*-clauses (headed by *wie*), some of which optionally allow a proform in what *might* be the extraction site, also allow only nearby linguistic material to provide their interpretations. In section 2.3.1, I return to these cases, deriving the locality requirement from the claim that *As*-clauses must structurally adjoin to the constituent (function) from which they obtain their meaning. In contrast, elided VPs, and their more cross-linguistically common proforms, attain their meaning from a phrase that is merely contextually salient. In the proform cases, the antecedent need not even be linguistic material; Hankamer and Sag (1976) is the classic discussion of these issues (see also Sag and Hankamer 1984).[1]

2.1.2. *Strong (Externally Determined) Islands*

Though rare, it is possible to find attested cases in which *as* is separated from the gap by more than a single clause. See (12) for a pair of Predicate-*As* extractions; (13) is a long CP-*As* case.

(12)a. "... time having at last reached for the logician, just as I am sure he knew it would _."
(David Berlinski, *The Advent of the Algorithm*, p. 180)

b. "... even though people were crabby and snappish ... she DID, mostly, love them as she knew she ought to _."
(Jane Smiley, *Moo*, p. 26)

[1] On the pronominal analysis of VP-ellipsis advocated most extensively in Lobeck (1985), contrasts of the sort reviewed here are no more surprising than the fact that the trace in (ia) must be linked with the extracted *Wh*-phrase, whereas the pronominal in (ib) is free to be discourse bound.

(i) I don't like the look of [that lawyer with the chili-stained bow tie]$_1$.
a. [Which jury member]$_2$ does Charles think we can successfully bribe t$_{*1/2}$?
b. Charles thinks we can successfully bribe him$_1$, though.

I thank an anonymous *NLLT* reviewer for bringing this parallel to my attention.

(13) "It was Bar-Hillel who convinced him to put aside all hesitations and postulate (as his intuitions had already told him _ was correct) something very much like the reconstructed historical forms at the abstract morphophonemic level."
(Frederick J. Newmeyer, *Linguistic Theory in America, 2nd Edition*, pp. 29–30)

Syntactic Island facts provide direct evidence in favor of a movement analysis. Indeed, one can *almost* say that *X* is an Island in English *only if* *As*-clause extraction fails from *X*; Postal (1997) seems to operate under this assumption.[2,3]

This section reviews the main Strong or Externally Determined Island data. This notion of "external determination" is borrowed from Postal (1997); the classification includes the full range of Strong Islands as well as *Wh*-Islands – i.e., those Islands resulting from some specific structural configuration. I do not address the issue of Weak or Internally Determined

[2] Failed *As*-extraction cannot be regarded as sufficient for Islandhood, however. Space precludes discussion, but the generalization is that *As*-clause gaps must be underlying objects, assuming an unaccusative analysis of adjectival predicates like *be correct* in (13) (Stowell 1987; Lapointe 1991). Thus, while intuitively not Islands, unergative subjects cannot be *As*-clause extraction sites:

(i) *S5 is complete, as (they said) (it) {implies / suggests / indicates} that God exists.

[3] Some grammatical extractions from factive contexts make even this necessary condition slightly too strong (e.g., *Fats was a bum, as we now realize that he was* versus **How badly did we finally realize that Fats played?*). One also finds violations of so-called Manner-of-Speaking Islands (Zwicky 1971):

(i) "As Roget might well have grumbled, that index represents the chicane that separates the original intent of the book from its present vulgar function."
(Simon Winchester, 'Word imperfect', *The Atlantic Monthly*, May 2001, p. 71)

The violability (contextual sensitivity) of Factive, Manner-of-Speaking, and Negative Islands – all Internally Determined Islands in the sense of Postal (1997) – indicates that they represent a fundamentally distinct phenomenon. For discussion in relation to the contrasts in these environments between *As*-clauses and non-restrictive relatives, see Potts (2002). Potts (2002) also offers many attested instances of grammatical *As*-clause extraction over negative elements; see, (ii) for another such case.

(ii) "A home is a great thing, as I had not the courage to say to Mr Robinson, . . . "
(A.S. Byatt, *Possession*, p. 53, Random House Modern Library Edition)

Islands since the facts prove devilishly complicated. They deserve a separate treatment, in the context of a discussion of the nature of such Islands in general (see footnotes 2 and 3).

Ross (1967, §6.1.1.4; 1984) was the first to observe that *As*-clauses run afoul of Island boundaries, a sensitivity he attributes to the "adverbiality" of *as*. He concentrates on Negative Islands and English CP-*As* (see Ross 1973 for a general discussion of Island-bound Sliftings), but, as he notes, the generalization extends to the full range of Strong Islands. (14)–(18) is a sample of the relevant English data; the (a) examples involve CP-*As*, the (b) examples Predicate-*As*. See McCloskey (1989), Lapointe (1991), and Postal (1997) for corresponding observations. (I modify *as* with *exactly* or *just* to block the 'because' reading of *as* (*The jackalope sighting was a real surprise,* {**exactly* / **just*} *as such beasts are rare*.)

(14) RELATIVE CLAUSE ISLAND

a. *Durians are delicious, exactly as Nina spoke with a grocer who claimed **t**.

b. *Nina quickly bought two durians, exactly as we met a chef who did **t**.

(15) ADJUNCT ISLAND

a. *Jim Durrow is a blackjack ace, just as they smiled politely when he reported **t**.

b. *Jim Durrow counts cards, just as the owners arrested Sammie when he did **t**.

(16) SUBJECT ISLAND

a. *The word *if* is a verb, just as the linguist's claiming **t** made everyone smirk and giggle.

b. *He has strong arguments for the position, exactly as the linguist's claiming he does **t** made everyone smirk and giggle.

(17) COMPLEX DP ISLAND

a. *Americans have a right to cheap gas, just as George espoused his belief that the world should accept **t**.

b. *Eddie fills his truck with leaded gas, just as they believed the report that he must **t**.

(18) *Wh*-ISLAND

a. *Chuck rides a unicycle, just as Sue asked me whether I knew **t**.

b. *Chuck rides a unicycle, just as Sue asked me whether I could **t**.

It is well known that VP-ellipsis is insensitive to Islands, so these failures strengthen the negative conclusion of section 2.1.1, as well as supporting the positive assertion that these gaps are due to movement. Thus, I've updated the notation from '_' to **t**(race), though I remain agnostic about what item produces the **t** (see section 2.2). Stowell (1987), Postal (1994, §2.4), and Potts (2002) offer arguments (from resumptive pronouns and an exceptionless non-correlation with overt DPs) that these gaps are non-DP gaps.

Although full documentation would be unwieldy, I provide in (19)–(21) a small sample of the Island data in Thai, Danish, and German, which are also uniformly ungrammatical. Importantly, the Danish and German cases are not rescued by their optional proforms, though such items freely find Island-external antecedents when used as VP proforms.

(19) WH-ISLAND (THAI)

*T^{h}u?.rian ?a.roy yaaŋ t^{h}ii Chris t^{h}aam Nina tɔɔn t^{h}ii thəə
durians delicious as C Chris ask Nina when C she
k^{h}on.p^{h}op k^{h}raŋ.rææk **t**.
discover first **t**
Durians are delicious, as Chris asked Nina when she first discovered.

(20) RELATIVE CLAUSE ISLAND (DANISH)

*Durianer er lækre, som Nina mødte købmanden $\varnothing_1$ der
*durians are delicious as Nina met grocer.*DEF $\varnothing_1$ EXPL.
nævnte {det$_1$ / t$_1$}.
mentioned {*it*$_1$ / **t**}
Durians are delicious, as Nina met the grocer who mentioned (it).

(21) ADJUNCT ISLAND (GERMAN)

*Helmut isst gerne Kartoffeln, wie wir lächelten, nachdem er
Helmut eats gladly potatoes as we smiled, after he
{es / **t**} zugab.
{*it* / **t**} *admitted*
Helmut likes to eat potatoes, as we smiled after he admitted (it).

These Island data are in a sense unsurprising, given the intuitively felt gap in *As*-clauses. But they also raise an important question. It seems natural to regard *As*-clauses as containing an extracted predicative or clausal element, either the clause's head or a null operator. But then one would expect such an extractee to behave like a VP or CP with regard to Islands. This is not the case, however. Consider, for instance, the *Wh*-Island in (22). Both relativization and CP-topicalization are possible from this environment, but the comparable *As*-clause is completely ungrammatical.

(22)a. ?Aldrige was a spy, which$_1$ the investigator asked Mrs. Ames whether she knew t_1.

b. ?[That Aldrige was a spy]$_1$, the investigator asked Mrs. Ames whether she knew t_1.

c. ?Aldrige was a spy, as the investigator asked Mrs. Ames whether she knew **t**.

In all of (22a–c) the extractee is the argument of *knew*. Given standard assumptions, the extraction possibilities should be the same for each. The minimal contrast between (22a) and (22c) is particularly curious, since both seem to involve a sentential proform. The situation is the same for Predicate-*As*. Chomsky (1986, p. 20) observes that VP-preposing flaunts *Wh*-Islands fairly readily. He provides (23a); relativization as in (23b) is even better.

(23)a. [Fix the car]$_1$, I wonder whether he will t_1.

b. He said he fixed the car, which$_1$ they had earlier asked him whether he would t_1.

But parallel *As*-clause extraction is impossible. (24) provides a minimal contrast with, in particular, the relative clause in (23b).[4]

(24)a. *He fixed the car, (just) as we wondered whether he really would **t**.

b. He said he fixed the car, (just) as they had asked whether he would **t**.

Potts (2002) gives an account of these contrasts based on the contrasting semantic types of these various extractees, building on the semantics on *As*-morphemes as presented below and Cresti's (1995) proposal that Island extractees must be $\langle e \rangle$-type expressions (see also Cinque (1990) and Frampton (1991) for earlier statements of Cresti's principle).

2.1.3. *(Pseudo) parasitic gaps*
Cases such as (25), modified from Postal (1994, p. 78), seem to indicate that English *As*-clause extraction can license *parasitic gaps* (p-gaps).[5]

(25)a. Tony is able to run a four-minute mile, as those who believed **pg** most strongly boasted **t** in class.

b. Tony is able to run a four-minute mile, as he boasted **t** before trying to prove **pg**.

However, it should be noted that Postal (1994) is an extended argument for (*inter alia*) the position that English *As*-clauses do not license true p-gaps. According to Postal, the **pg**'s in (25) are *pseudoparasitic* gaps. But this does not necessarily invalidate my use of the data here. Postal's (1994, §5) conclusion is that English *As*-clauses manifest a kind of covert *right node raising*, a movement construction in his view (Postal 1998, §4).

I have not investigated the cross-linguistic generality of complex *As*-clauses like those in (25). Such an investigation would require a separate paper, given the complications surrounding all such multiply-gapped struc-

[4] The examples in (24) have acceptable but irrelevant readings on which *as* is a temporal operator. A rough paraphrase of this reading: ?*He fixed the car at exactly the moment that we wondered/asked whether he would (fix it)* (the wondering/asking and the onset of the fixing temporally coincide).

[5] Lapointe (1991) also observes the ability of *As*-clause extractions to license p-gaps.

tures: witness the controversy over the nature of English cases like the above. Nonetheless, it seems that Danish allows rough analogues of (25):

(26) Andersens eventyr er bedre end Grimms, som Line
Andersen's fairy-tales are better than Grimms' as Line
påstod **t** uden at kunne bevise **pg** over for Daniel.
asserted **t** *without to be-able-to prove* **pg** *to Daniel*
Andersen's fairy tales are better than Grimms', as Line claimed without being able to prove to Daniel.

(27) ? Andersens eventyr er bedre end Grimms, som den person
Andersen's fairy-tales are better than Grimm's as the person
der påstod **pg** på mødet også kunne bevise **t**
that claimed **pg** *at meeting*.DEF *also could prove* **t**
Andersen's fairy tales are better than Grimms', as the person who asserted at the meeting could also prove.

At first, it appears that Predicate-*As* clauses also license pseudoparasitic gaps; see (28) (the gaps are labeled '**pg**' simply to highlight this analysis). Although it is difficult to find direct claims – i.e., negative data – to this effect in the literature (but see Cinque 1990, p. 102 for Italian), the consensus seems to be that VP-preposing does not license p-gaps in English (cf. Levine et al. 2001). So it would be surprising if Predicate-*As* extraction could license them.

(28)a. Sue made a million dollars, as Frank could **t** without even trying to **pg**.

b. Ames stole the document, as Chuck said he would **t** before the enemy did **pg**.

c. Ames stole the document, as the spy who tried to **pg** attested that he had **t**.

However, it is evident upon inspection that (28) does not involve multiple gaps, parasitic, pseudoparasitic or otherwise. Rather, these examples involve movement gaps from **t**, and VP-ellipsis from the **pg** sites. Three considerations argue for this analysis. First, consider (28b). Although the interpretation of the **t** gap is unambiguously *steal the document*, as per the locality restriction reviewed in 1.1.1 above, the second gap is ambiguous. It can either take *steal the document* as its antecedent, or it can take the more

local VP *said he would* **t** as its antecedent, which is in turn interpreted as *said he would steal the document*. In this sense, the structure contrasts with the CP-*As* case in (29), in which the interpretation of **pg** is unambiguously the same as that of **t**.

(29)a. Ames stole the document, as Chuck said he believed **t** before Kim formally announced **pg** at the meeting.

b. **pg** = Ames stole the document

c. **pg** $\neq$ Chuck said he believed **t** (**t** = Ames stole the document)

Second, parasitic gaps are sensitive to Islands; see Kayne (1984, p. 166), Chomsky (1986, §10), Kennedy (1997), and others. But the "**pg**" gaps in (28) display no such sensitivity; compare the CP-*As* case in (30a) with the Predicate-*As* case in (30b), which displays the insensitivity to Islands typical of VP-ellipsis.

(30)a. Ames stole the document, as Chuck admitted **t** after Susanne (*met a reporter who) claimed **pg**.

b. Ames stole the document, as Chuck said he would **t** after Susanne (met a spy who had) tried to _.

Third, it is possible to mix gap types in cases like (28), with a CP-type gap for **t** and a VP-type gap for '_' (the reverse is impossible because CP-ellipsis is uniformly blocked in English). This is seen in the grammatical (32a,b); (32c,d) show that *As*-clause extraction requires gap-type identity.

(31)a. Ames stole the document, as the spy who tried to _ attested **t**.

b. Ames stole the document, as Chuck claimed **t** before the enemy did _.

c. *Ames stole the document, as the spy attested **t** and Bill tried to **t**.

d. *Ames stole the document, as Chuck claimed **t** and the enemy did **t**.

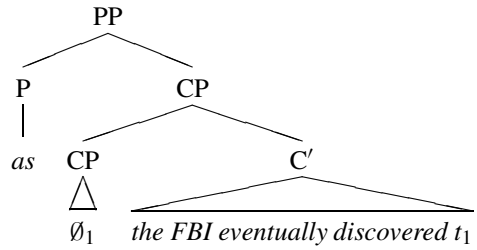
I conclude that there is no factual basis for the existence of Predicate-*As* (pseudo-) p-gaps. It might be that this is a possible analysis for such cases, but the VP-ellipsis analysis is there as well.[6]

2.2. As *as Preposition*

The above discussion shows that *As*-clauses define extraction constructions. This section argues that these extractions involve a null operator in the specifier of the CP complement of *as*, which I analyze as a preposition, following Emonds (1985, §6.3). Thus, the internal syntactic structure of *As*-clauses is as in (32)–(33); the structures instantiate English examples, but the analysis is claimed to hold cross-linguistically.

(32)a. Ames was a spy, as the FBI eventually discovered.

b.



[6] This discussion suggests an explanation for why it is so difficult to find VP-preposing p-gap data in the literature. Cases like (i) seem like the best candidates for such a test, but they have grammatical VP-ellipsis analyses.

(i) Sue said she would win the prize, and [win the prize] she did **t** without even trying to {(*)**pg / _**}.

Postal (1994, (4c,d)) cites the examples in (ii) as evidence that VP-preposing does not license p-gaps. But (iia,b) run afoul of the fact that VP-preposing is strained at best from the site of the p-gap even in simple cases, as seen in (iii). (Johnson (2001) gives things like (iiib) a single '?'.)

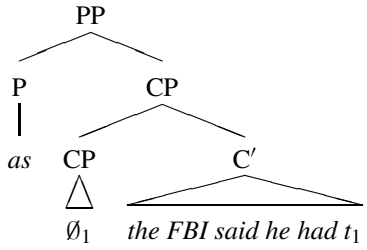
(ii)a. *[Beaten by the guards]$_3$, she seems to have been t_3 while trying to avoid being pg_3.

b. *[Abuse my ferret]$_4$, I refused to accept that he could t_4 even after seeing him t_4.

(iii)a. ??He hoped to avoid being beaten by guards, and [beaten by guards]$_1$ he did avoid being t_1.

b. *He promised not to abuse my ferret, but [abuse my ferret]$_1$ I saw him t_1.

(33)a. Ames stole important documents, as the FBI said he had.

b. 

These structures make two independent claims: (i) that *as* is a preposition; and (ii) that the extraction in its complement is of a null-operator. There is solid evidence that *As*-morphemes are not themselves extractees, supporting (ii), the more important of the two claims. English *As*-morphemes cannot ever appear *in situ* (Stowell 1987), contrasting markedly in this sense with sentential proforms such as *so* (*I hope so* ∼ *So I hoped*).[7] Thai also provides solid evidence that *As*-morphemes are immobile. (34)–(35) show that Thai employs the same item (*yaaŋ*) for both its *As*-clauses and its *how*-type questions. (German *wie* and Italian *come* also have both these uses.)

(34) Clyde plon tha?naak^{h}aan yaaŋ.rai?
*Clyde rob bank how.*QUES
How did Clyde rob the bank?

(35) T^{h}u?.rian ?a.roy yaaŋ t^{h}ii k^{h}on ee.c^{h}ian laai k^{h}on ruu.
durians delicious, as C Asians many CLASS. *know*
Durians are delicious, as many Asians know.

Of course, this homophony looks initially like a point for an 'Extractee-*As*' position. But a crucial feature of (35) is that *yaaŋ*, in its *Wh*-operator capacity, remains *in situ*, as do all Thai *Wh*-operators. In contrast, the *yaaŋ* of *As*-parentheticals is unable to occupy the gap in its clause; the obligatory form is (35), with *yaaŋ* in initial position. Thus, from the perspective of

[7] Culicover (1980, §3) argues for a link between the *so* of, e.g., *I hoped so* and CP-*As*-clauses, in effect claiming that *as* and *so* alternate roughly in the fashion of *either* and *neither* in (i):

(i) Tom didn't write any plays, and {I didn't either / neither did I}.

Although *as* and *so* have quite different distributions, the approach deserves further exploration. It seems likely that these constructions are related.

Thai A′-movement, an extraction analysis of *yaaŋ* would be anomalous, manifesting as it would the only case of surface overt-operator extraction.

Claim (i) – prepositionhood for *As* morphemes – is more difficult to establish, because there are no known necessary and sufficient conditions for prepositions (McCawley 1998, §7b). But an indirect argument can be made, as follows: there is solid evidence that at least some comparative morphemes are prepositional: they can be pied-piped, and they optionally take DP complements (paralleling, e.g., *before*); see Hankamer (1973) and Kennedy (1999, §2). And it is clear that one wants to maximize the similarities between comparatives and *As*-clauses. The notable tendency for languages to employ the same sounding word for both constructions (Danish, English, and German, among others) provides initial motivation, which is greatly strengthened by their shared defining syntactic characteristics. The most prominent of these is the obligatory gap linked to an Island-sensitive extraction. But the following subtler parallel might turn out to be more important: comparatives and Predicate-*As*-clauses manifest the only robust instance of optional inversion of a subject with auxiliary-*do* in English:

(36)a. Ed built a canoe, as did his wife.

b. Ed built more canoes than did his wife.

(37)–(39) indicate that this inversion is subject to the same set of restrictions in comparatives and *As*-clauses; the only difference is stylistic: inversion in comparatives is more formal than it is in *As*-clauses.

(37)a. Ed built a canoe, as did {*she / SHE}.

b. Ed built more canoes than did {*she / SHE}.

(38)a. Buzz has been flying longer than has Chuck (*been (flying)).

b. By the end of the trip, Klaus will have seen many bats, as will Eddie (*have (seen)).

(39)a. Klaus would be happier in the north than would Chuck in the south.

b. Klaus would be happy in the north, as would Chuck in the south.

Though the exact nature of this inversion is a difficult matter, one deserving of a separate investigation,[8] it provides strong impetus for assigning comparatives and *As*-clauses a similar internal syntax. This entails treating *as* as a prepositional element, with the extraction characteristic of the construction defined by a null operator.

2.3. *How Does As Hook up with the Main Sentence?*

Sections 2.1–2.2 above concern the structure of *As*-clauses themselves. This section addresses their structural relationship with the clause or sentence to which they bear a dependency. For the vast majority of cases, the descriptive generalization in (40) is valid.

(40) *As*-clauses adjoin directly to the linguistic material from which they obtain their meaning.

[8] A reviewer suggests that this inversion is actually *heavy shift* of the subject, as Culicover and Levine (2001) argue for *locative inversion* (*stylistic shift*) cases such as (i) (Culicover and Levine 2001, (21e,f)).

(i)a. In the room slept fitfully the students in the class who had heard about the social psych experiment that we were about to perpetuate.

b. *In the room slept fitfully the students in the class who had heard about the social psych experiment that we were about to perpetuate (very) fitfully.

Positive evidence for this is provided by the relative well-formedness of (iia,b) in contrast to the long versions of (38).

(ii)a. Eddie has been flying longer than has been Chuck.

b. By the end of the trip, Klaus will have seen many bats, as will have Eddie.

But, notably, the post-verbal DPs in these examples are not necessarily heavy. What's more, heavy shift of this sort implies IP-adjunction. Thus, it should be impossible for a VP adverb to follow the subject. The data in (39) contradict this, as does (iii).

(iii) Ali would have driven a car to the park more eagerly than would have the students (in our class on environmental consciousness) to the concert.

Furthermore, since the inversions are not at all limited to unaccusative verbs, it is impossible to analyze the subjects as VP-internal; the appearance of auxiliary-*do* is additional reason to suspect that the subjects are VP-external. Auxiliary-*do* is not a characteristic of stylistic inversion.

This principle accounts for the anomaly of the free-standing *As*-clauses in (41), which is based on an example Hankamer and Sag (1976, (3)) use to illustrate the Deep Anaphor properties of *do so/it*.

(41)a. [Hankamer attempts to stuff a 9-inch ball through a 6-inch hoop.]

b. #Sag: "Just as Joel would."

c. #Sag: "Exactly as they claimed."

Since there is no other linguistic material in (41), the *As*-clause remains semantically incomplete in a sense made precise in section 3. It should be noted that in light of section 3's analysis, (40) simply states that the propositional or property-level argument of the *As*-clause – itself a function from propositions to propositions (or properties to properties) – must be supplied via function application. Since I assume function application is the basic mode of semantic composition in general, (40) follows from the lexical entries for *As* and the type-driven semantics I employ.

As noted, (40) is valid for the majority of cases. However, there exist *As*-clauses that are not part of any larger linguistic structure and are nonetheless well-formed. Section 3.2 contains a detailed discussion of such cases. Importantly, they occur felicitously only in specific contexts, suggesting that (40) represents the core generalization. What's more, a close examination of the apparent exceptions reveals them to be entirely consistent with my overall proposals.

2.3.1. *Initial Support for the Sisterhood Restriction*

Strong support for the claim that the *As*-clause's sister determines the interpretation of its gap comes from paradigms like (42)–(44).

(42) Alan claimed that cryptography is a blast, as you mentioned.

a. *As*-clause = you mentioned that cryptography is a blast

b. *As*-clause = you mentioned Alan claimed cryptography is a blast

(43) Alan claimed that, as you mentioned, cryptography is a blast.

a. *As*-clause = you mentioned that cryptography is a blast

b. *As*-clause $\neq$ you mentioned Alan claimed cryptography is a blast

(44) As you mentioned, Alan claimed that cryptography is a blast.

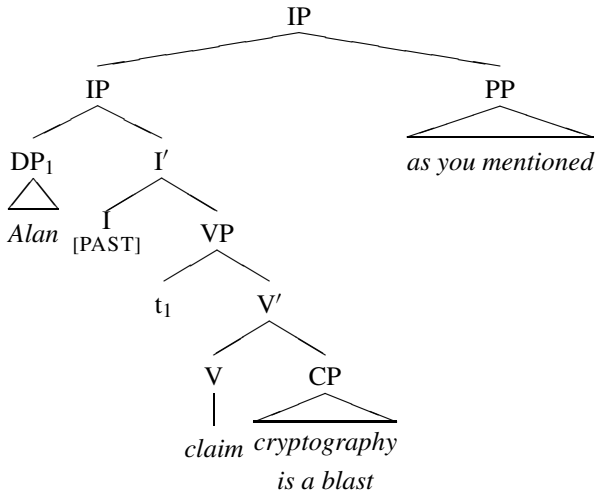
a. *As*-clause ≠ you mentioned that cryptography is a blast

b. *As*-clause = you mentioned Alan claimed cryptography is a blast

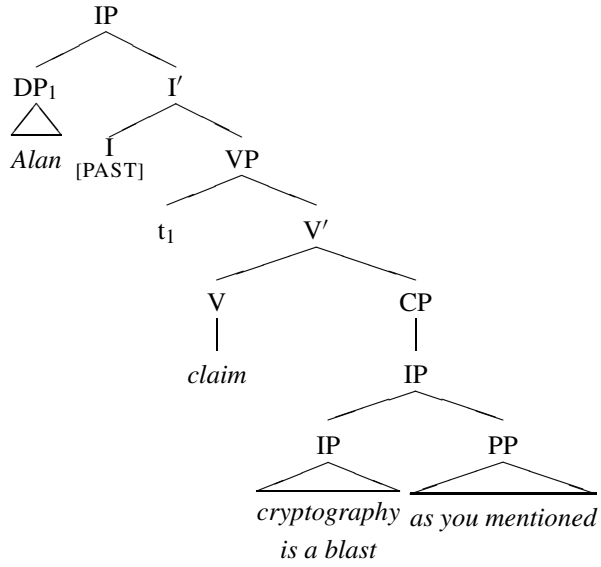
Sentence (42) is ambiguous. It can either assert that you mentioned that cryptography is a blast, or that you mentioned that Alan claimed this. But (43) and (44) are unambiguous. (43) asserts only that you mentioned the fun of cryptography; *Alan claimed* is out of range, as it were. In contrast, (44) unambiguously asserts that you mentioned Alan's claim about cryptography. These fact follow directly from the sisterhood requirement (40). For instance, the string-final position of the *As*-clause in (42) is compatible with either of the structures in (45).

(45) Alan claimed that cryptography is a blast, as you mentioned.

a.



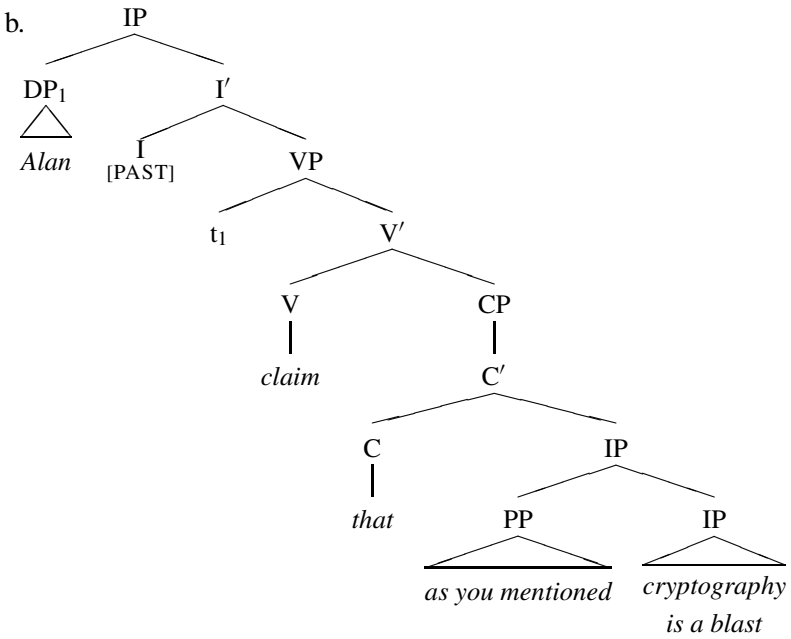
b.



However, the *niched* (clause internal; Ross 1973) *As*-clause in (43) can be sister only to the lower CP:

(46)a. Alan claimed that, as you mentioned, cryptography is a blast.

b.



Similarly, (44) is compatible only with adjunction to the matrix CP, which properly contains the embedded [$_{CP}$ *cryptography is a blast*]. That is, there is no adjunction site that is consistent with the sentence-initial niching position and excludes the matrix clause.

It is now also possible to understand the limitations on possible interpretations of *As*-clauses discussed in section 2.1.1. One of those contrasts ((8)–(9)) is repeated here:

(47) That space has four dimensions is widely known. They announced {it / that} earlier.

a. *it / that* = that space has four dimensions is widely known

b. *it / that* = space has four dimensions

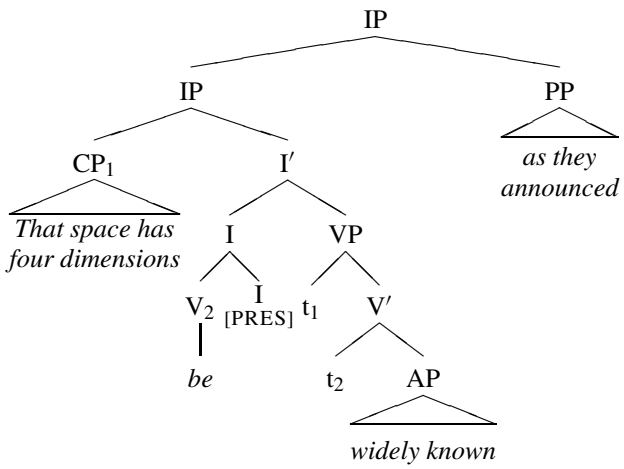
(48) That space has four dimensions is widely known, as they announced.

a. *As*-clause gap = that space has four dimensions is widely known

b. *As*-clause gap ≠ space has four dimensions

The only structure for (48) that is consistent with the linear order and meets the standard definition of linguistic tree (Partee et al. 1993, §16.3; Rogers 1998, §3.2) is (49).

(49)



The *As*-clause cannot be sister to the subject CP, given its clause-final position. Only the IP that contains the subject CP is an eligible adjunc-

tion site.[9] Thus, the sisterhood requirement (40) is well-supported by these straightforward facts. I address some less direct evidence in section 2.3.2.

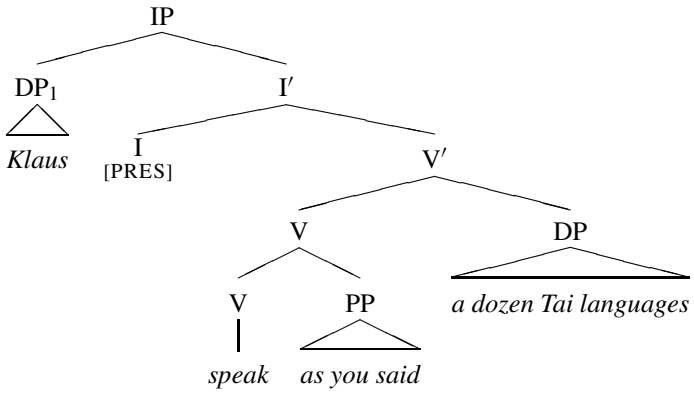
2.3.2. *Additional Support for Sisterhood*

At first, the legitimate niching site in (50) seems to indicate that the sisterhood restriction (40) is mistaken.

(50) Klaus speaks, as you said, a dozen Tai languages.

If the structure of (50) is as in (51), then the *As*-clause must have gotten its meaning from a discontinuous structure.

(51)



In (51), the *As*-clause is sister to a X^0 level category (which in itself renders the structure uninterpretable, given the semantics of section 3),[10] though the constituent that supplies its meaning expresses the proposition that Klaus speaks a dozen Thai languages. However, (51) is an incorrect representation; a closer look reveals all the characteristics of *heavy shift*. First, the post-parenthetical DP must be modified to attain even marginal acceptability:

(52) Klaus speaks, as you said, {*them / ??German / ?excellent German}.

Second, neither heavy shift nor these nichings can separate a preposition from its object (I thank Jim McCloskey, p.c. 10/00, for this observation):

[9] The VP is also a possible adjunction site in these cases, since it too is propositional; see sections 2.3.2 and 3.

[10] Adjunction to [$_{DP}$ *a dozen Tai languages*] would also yield a type-mismatch, and is equally suspect syntactically in light of McCloskey's (1999) proposal, supported below, that adjunction to selected categories is disallowed.

(53)a. ??Ames spoke to, as you maintained, the head of Soviet counterinsurgency.

b. Ames spoke, as you maintained, to the head of the Soviet counterinsurgency.

(54)a. *Ames spoke to recently the head of Soviet counterinsurgency.

b. Ames spoke recently to the head of Soviet counterinsurgency.

Finally, as in effect observed in Emonds (1976, pp. 46–47), an *As*-clause cannot separate the first object in a double-object construction from the verb.[11] Heavy shift shows this same restriction.[12]

(55) *She sent, as you said, her loving father a request for funds.

(56) *She sent recently her loving father a request for funds.

These parallels suggest that the structure of (50) is not (51), but rather (57), in which the object occupies an adjoined position.

[11] The failures in (55)–(56) might be attributed to the fact that the shifted material is not a constituent. However, they are arguably part of a broader restriction preventing the separation of a verb from its Indirect Object, in the Relational Grammar sense of this term. Compare (i) and (ii); the latter is good with *faxed* only if the old army buddy got transmitted through the machine – i.e., if *an old army buddy* is a Direct Object.

(i) I wrote/faxed an old army buddy of mine recently.

(ii) *I wrote/faxed recently an old army buddy of mine.

[12] It has been argued that heavy shift is a PF-operation. I doubt that this is correct, though, since it has an effect on Negative Polarity Item licensing, as observed by Culicover (1981, (46)):

(i)a. John gave none of the books that he found to any of the libraries in the city.

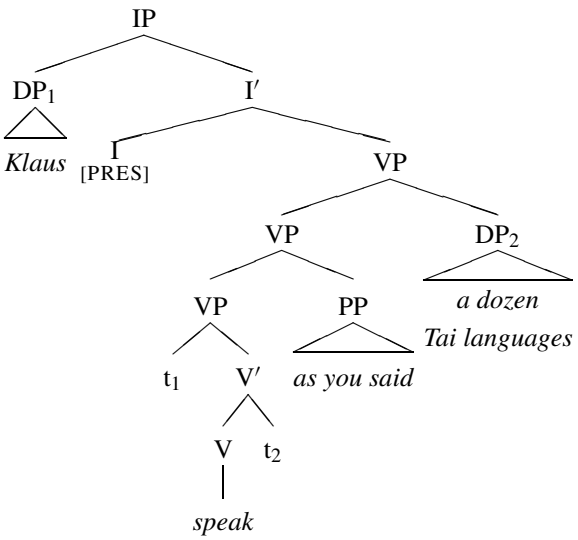
b. *John gave to any of the libraries in the city none of the books that he found.

c. *John gave any of the books that he found to none of the libraries in the city.

d. John gave to none of the libraries in the city any of the books that he found.

(57)a. Klaus speaks, as you said, a dozen Tai languages.

b.



In (57), the VP, analyzed in terms of the VP-Internal Subject Hypothesis, provides a suitable (i.e., propositional) input for the *As*-clause. But (57) might be regarded as suspicious, because the gap in the *As*-clause is in a position reserved for CPs; a VP complement to *said* is syntactically impossible. Do these structures attribute too much flexibility to *As*-clauses? In section 3.3.1 I show that an *As*-clause in fact places no direct syntactic constraints on the argument that supplies the meaning of its trace/variable.

One other case is worth mentioning here. Given the above argumentation, one would expect (58) to allow the (b) reading. In fact, only the (a) reading is available:

(58) Alan said, as you mentioned, that cryptography is a blast.

a. *As*-clause = you mentioned Alan said that cryptography is a blast

b. *As*-clause $\neq$ you mentioned cryptography is a blast

The string is consistent with adjunction to the lower CP, which would produce the (b) reading. However, McCloskey (1999) presents extensive evidence, including the cases in (59), that indicate a ban on adjunction to non-matrix CPs.

(59)a. *It's probable [in general (most of the time) that he understands what is going on].

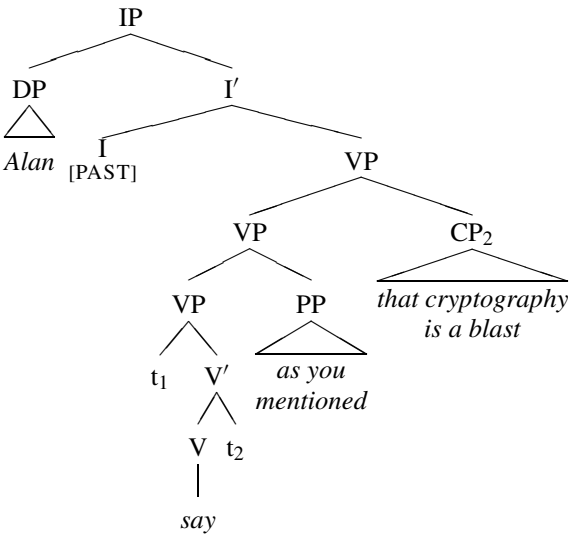
b. *[In general that he understands what is going on] is fairly clear.

Thus, the absence of the CP-adjoined construal of (58) follows from the restriction evident in (59) and the decision to treat *As*-clauses as simple syntactic modifiers.[13]

But the (a) reading is also somewhat unexpected. It presents the same challenge as the sequence verb–*As*–clause–object. Here again, I must argue that (58) involves rightward movement of the *that*-clause to a VP-adjoined position, so that the *As*-clause can adjoin to VP:

(60)a. Alan said, as you mentioned, that cryptography is a blast.

b.



Since extraposed clauses are Islands, extraction from the *that*-clause in these cases should be strained or impossible. This seems right:

(61)a. [On Friday]$_1$, Ames thinks they should fire the new guy t_1, as you said.

b. ??[On Friday]$_1$, Ames thinks, as you said, that they should fire the new guy t_1.

[13] A reviewer cites (i) as acceptable on an interpretation in which the *As*-clause applies to the *that*-clause complement to *admitted*.

(i) Alan admitted, as you originally suggested, that it would take several years to finish the book.

The above proposals predict that structures like (i) should also yield exceptions to McCloskey's (1999) generalization about adverbial modification.

(62)a. [The new guy]$_1$, Ames thinks that they should fire t_1 immediately, as you said.

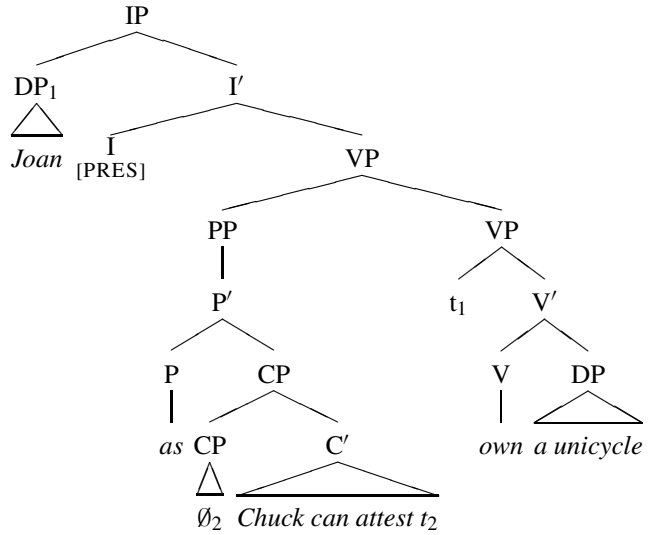
b. ?? [The new guy]$_1$, Ames thinks, as you said, that they should fire t_1 immediately.

2.4. *Conclusion: The Way Things Look*

The facts uncovered in this section combine to yield structure (63b) for basic CP-*As*-clauses cases like (63a).[14]

(63)a. Joan, as Chuck can attest, owns a unicycle.

b.



This is simply a CP that includes a left-adjoined PP modifier; internal to the PP is a trace. The view developed and supported here is unconventional in its conventional view of these parenthetical expressions. Existing treatments, though differing radically in the details, agree that parentheticals require *something* nonstandard – special root level projections (Emonds 1976), multiple roots and crossing branches (McCawley 1989), or surprising constituent structure (Steedman 2000). All these variations from normal clausal design are intended to reflect the intuition that parentheticals contrast with other adverbials in being somehow separate from the

[14] The above structures treat *As*-clauses like (very flexible) adverbial modifiers. When niched clause-internally, there is a syntactic command relation between the subject of the matrix and the *As*-clause. A *prima facie* expectation is that such cases allow pronominals inside the *As*-clause to be bound by a matrix subject. This is not the case, however; see section 3.3.4.

rest of the sentence. Section 3 motivates the idea that this 'otherness' is a semantic effect. At least in the case of *As*-clauses, the syntax is unremarkable, as the data reviewed above show.

However, it is worth noting that parentheticals in general, and *As*-clauses in particular, display a property that one might argue is more easily captured on an analysis that treats them as structurally unique – namely, their distinctive *comma intonation*. Examples such as (63) above, in which the *As*-clause is niched, are ungrammatical if read without an intonation break at the onset of the parenthetical and another such pause at its coda. A pause is required even of sentence final parentheticals; indeed, intonation is essentially the only overt signal that (64a) involves Predicate-*As*, whereas (64b) involves VP-ellipsis inside the complement of Adjunct-*As*, a non-parenthetical adverbial relativizer with a distinct semantics.

(64)a. Juan solved the problem, as Sven did.

b. Juan solved the problem as Sven did.

c. Juan solved the problem as Sven solved it – with a calculator.

The key semantic difference between (64a) and (64b) is that the latter entails not only that Juan and Sven solved the problem but that they solved it in some common (but often unspecified) manner. One might argue that assigning (64a) a radically distinct syntax, say one involving two separate trees, one superimposed on the other (plus a linearization algorithm of some sort) could state the conditions for an obligatory comma intonation (though note that it is not at all obvious what the conditions would be). In contrast, if these parentheticals are just like other modifiers then it seems initially unclear how to enforce the pause.

But in fact the present analysis provides the basis for a straightforward generalization. Hayes (1989), synthesizing and summarizing insights of Nespor, Vogel, Selkirk, and others, notes that it is typical to find Intonational Phrase boundaries at the onset of CPs and between subjects and predicates. Given the VP-internal Subject Hypothesis, adopted and supported throughout this work, these sites correspond to the edges of clausal expressions. Thus, the comma intonation associated with *As*-clauses might follow from the fact that they contain clauses. In the case of CP-*As*, the effect would be compounded by the semantics, which guarantee adjacency

to a propositional expression. Hayes's observations, and the approach sketched here, receive strong support from paradigms like (65)

(65)a. Stupidly, Eddie crashed his unicycle.

b. Eddie crashed his unicycle, stupidly.

c. Eddie crashed his unicycle stupidly.

d. Eddie (,) stupidly(,) crashed his unicycle.

Both (65a,b) involve *stupidly* as CP modifier; it takes the corresponding proposition as its argument, essentially making a speaker-relativized value judgment on it. But in (65c), which lacks a comma intonation, *stupidly* must be read as a VP modifier; it asserts that Eddie crashed his bike in a stupid manner. An exception to this *might* be (65d), which allows a sentential modifier reading without a strong pause, but even here the tendency is to introduce comma intonation for this reading, in line with Hayes's generalization. Absent the comma pauses, a VP modifier reading is strongly preferred. The examples in (66) reinforce the point.

(66)a. Eddie, *I think*, crashed his unicycle

b. Eddie, *stupid though this will sound*, crashed his unicycle.

c. Eddie crashed his unicycle, *didn't he*?

Although it is not possible to extend the discussion to the italicized parentheticals, it is clear that they are clausal expressions. I see no obstacle to analyzing them as syntactic-adjuncts. They stand, then, as additional evidence for a principle linking clauses with comma intonation. This principle requires none of the extreme complexity that a description based on nonstandard representations would require. What's more, nonstandard representations would leave unexplained all the parallels with regular adjuncts discussed in section 2.3. At best, one would have to state the generalizations twice, over regular structures and over whatever nonstandard representations parentheticals are argued to have.

3. (PURE) SEMANTICS

This section provides a detailed semantics for *As*-clauses and the larger structures containing them. Informally, the treatment can be summarized as in (67).

(67) Tito, as you know, paid to visit the moon.

a. (67) conventionally implicates that you know Tito visited the moon.

b. (67) asserts only that Tito paid to visit the moon.

That is, the ultimate semantic denotation of a sentence with an adjoined *As*-clause does not contain the *As*-clause's content; both (67) and the simple assertion *Tito paid to visit the moon* denote the same proposition. The *As*-clause makes its contribution solely in the form of a conventional implicature associated with *as* itself. This is shown to have a number of desirable consequences.

Throughout this section I am guided – restricted – by the syntactic facts explored in section 2. I begin in section 3.1 by offering denotations for Predicate- and CP-*As*. In section 3.2, I show how these denotations interact with the semantics of the structure to which *As*-clauses adjoin. Section 3.3 reviews some nice consequences of the semantics developed. In order to keep the discussion focused, I concentrate on CP-*As*; the generalizations formulated apply equally to Predicate-*As*.

3.1. *Lexical Denotations for As-morphemes*

An important first step in determining the lexical entry for *As*-morphemes is recognition of the fact that they conventionally implicate that their complement is true. This is seen clearly in (68), in which the *As*-clause is embedded below the standard *presupposition holes*: conditionals, questions, and negation. In all cases, the content of the *As*-clause 'escapes'.

(68) *All conventionally implicate that Joan claims you are an excellent theremin player.*

a. If it is said that, as Joan claims, you are an excellent theremin player, then you can audition for our spooky band.

b. Is it said that, as Joan claims, you are an excellent theremin player?

c. It is not the case that it is said that, as Joan claims, you are a excellent theremin player.

In (68), the niching-point of the *As*-clause is such that its only interpretation is equivalent to *Joan claims you are an excellent theremin player*. Section 2.3 above shows that this follows from the sisterhood requirement (i.e., function application plus the meaning of *As*). Thus, *as Joan claims* is subordinated to *it is said*, and yet its content is not within the scope of this intensional verb. Indeed, the truth of the *As*-clause is asserted throughout (68). Chierchia and McConnell-Ginet (1990, §6.2.1) and McCawley (1998, p. 448) observe that nonrestrictive relatives also conventionally implicate, or presuppose, their content, providing similar data. I characterize the contribution of *As*-clauses as a conventional implicature rather than a presupposition because such clauses can be used to provide new information without the need for accommodation of the sort associated with presuppositional predicates. For instance, (69a) can introduce the fact that the press has reported that Ames was a spy. In contrast (69b) cannot easily be used to introduce the fact that Ames was at one time a spy – this proposition must be accommodated.

(69)a. Ames, as the press reported, was a spy.

b. Ames has stopped spying for the government.

Following a suggestion made to me by Daniel Büring (p.c., 5/00), I build the conventional implicature directly into the lexical meanings by making *As*-clauses partial functions, borrowing the notational conventions of Heim and Kratzer (1998, §6.7.2, §9.1.2):[15]

[15] I employ the following notational conventions:

(i)a. x, $x_1, \ldots, x_3$, y, and z are individual variables – type $\langle e \rangle$.

(ii) f, g, and h are variables over properties – type $\langle s, \langle e, t \rangle \rangle$.

(iii) F, G, and H are variables over sets of properties – type $\langle \langle s, \langle e, t \rangle \rangle, t \rangle$.

(iv) p, $p_1, \ldots, p_3$, and q are variables over propositions – type $\langle s, t \rangle$.

(v) P and Q are variables over sets of propositions – type $\langle \langle s, t \rangle, t \rangle$.

vi w and w' are world variables; these appear as subscripts (e.g., **laugh** = $[\lambda w[\lambda x[\mathbf{laugh}(w)(x)]]] = [\lambda w[\lambda x[\mathbf{laugh}_w(x)]]]$.

(vii) A syntactic trace t_i is translated as X_i, where X is any type of variable.

I assume also free application of the type shifting rules of Predicate Abstraction (PA) – i.e., binding of free variables – and intensional raising and lowering (Montague's $^\wedge$ and $^\vee$ operators, respectively). Where possible, I ignore intensions, for the sake of simplicity.

(70) LEXICAL MEANING FOR CP-*As*

$\mathbf{as}_{CP} = [\lambda P \in D_{\langle\langle s,t\rangle,t\rangle}[\lambda p \in D_{\langle s,t\rangle} : P(p) \text{ is true } [p]]]$

(71) LEXICAL MEANING FOR PREDICATE-*As*

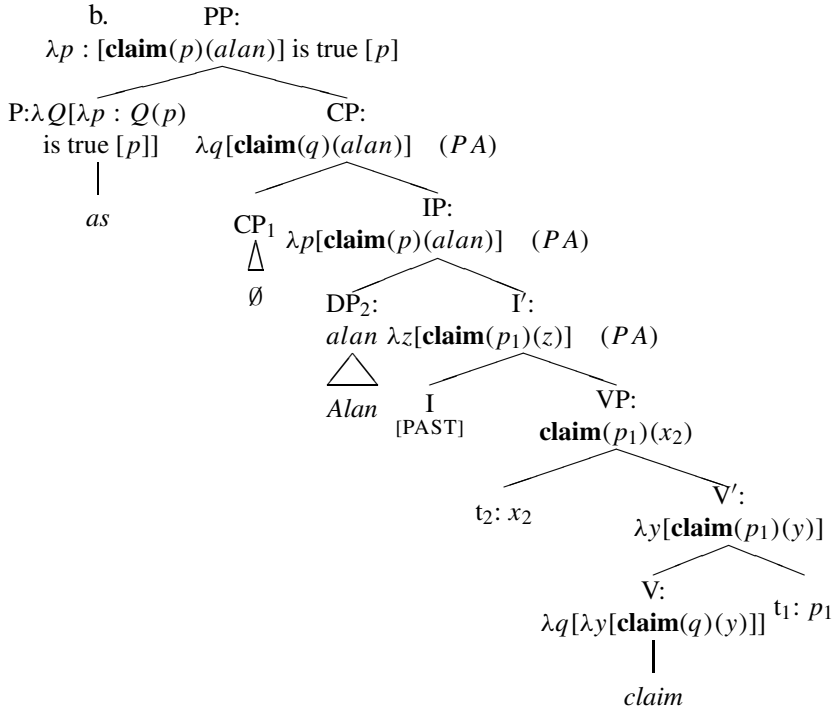
$\mathbf{as}_{Predicate} = [\lambda F \in D_{\langle\langle s,\langle e,t\rangle\rangle,t\rangle} [\lambda f \in D_{\langle s,\langle e,t\rangle\rangle} : F(f) \text{ is true } [f]]]$

The only difference of substance between these denotations is that, upon extraction, CP-*As* determines a trace of type $\langle s, t\rangle$ whereas Predicate-*As* determines one of type $\langle s, \langle e, t\rangle\rangle$. I use the notation '$\lambda X \lambda x : X(x)$ is true ...' to indicate the function is *partial* – defined only for those cases in which $X(x)$ expresses a true proposition.

These denotations reflect a lexically-based approach to the semantics of natural language. Thus, the complex nature of (70)–(71) is no more surprising – or avoidable – than any of the numerous stipulations one must make in defining the properties of lexical items. The important thing is that when these lexical items interact with the others, correct predictions are made about the resulting structures. See also Potts (2002), where the subtle but wide-ranging contrasts between *As*-clauses and nonrestrictive relatives are shown to follow from a single difference in the lexical meanings of *As* and nonrestrictive relative pronouns.

With these denotations in place, the *As*-clause in (72a), *as Alan claimed*, has the structure in (72b) and receives the annotated interpretation. ('PA' indicates the result of Predicate Abstraction; see footnote 15).

(72)a. Cryptography is a blast, as Alan claimed.



As it stands, CP-*As*-clauses denote in $\langle\langle s, t\rangle, \langle s, t\rangle\rangle$. Correspondingly, Predicate-*As* clauses denote in $\langle\langle s, \langle e, t\rangle\rangle, \langle s, \langle e, t\rangle\rangle\rangle$. They are, then, partial identity functions on propositions (for CP-*As*) or properties (for Predicate-*As*). This captures formally the dependence of *As*-clauses identified earlier as the syntactic sisterhood restriction (40): these clauses have an open argument slot; alone, they cannot express a proposition. In the usual situation, then, they must adjoin to an appropriately typed phrase.

However, as noted in section 2.3, there are cases (first brought to my attention by an anonymous reviewer) in which *As*-clauses appear on their own; see (73).

(73) [A woman deliberately returns home from work early to check up on her husband. She bursts into the bedroom unannounced, where her husband is in bed with another woman.]

Woman: "Aha! Just as I suspected!"

a. *As*-clause ≈ I suspected you were having an affair

These cases are initially surprising, but they are not problematic for the account developed here, for this central reason: the dependency of *As*-clauses is entirely semantic. Thus, *just as I suspected* ought to be able to appear as an isolated utterance *just in case its propositional argument slot can be*

filled. (73) indicates that, in some cases, the context can provide such a proposition. This flexibility is perhaps unremarkable. Jacobson (1999, 2000) has developed a semantics in which pronouns denote identity functions (on individuals), making them analogous to *As*-clauses. In turn, a sentence containing a free pronoun denotes not a proposition but a property, which is then applied to a contextually salient individual to yield a proposition. This is, I claim, the situation in (73): the proposition expressible as *you were having an affair* saturates the *As*-clause.[16]

The denotations in (70)–(71) correctly predict that *if* an *As*-clause A is adjoined to a constituent C, then the denotation of C provides the argument of A; this is an explicitly implicational version of (40). Thus the *As*-clause in (74) cannot be interpreted as in (73), though the relevant proposition is still salient.

(74) [A woman deliberately returns home from work early to check up on her husband. She bursts into the bedroom unannounced, where her husband is in bed with another woman.]

Woman: "Aha! You have, just as I suspected, skipped work today!"

a. *As*-clause = I suspected that you skipped work today

b. *As*-clause $\neq$ I suspected you were having an affair

Since the *As*-clause is adjoined in (74), the only way the structure can receive an interpretation is via function application. The restrictions on (73)-type readings are stringent: not only must the context supply a salient function, but the *As*-clause must appear unembedded for such a merely salient function to serve as its argument.

[16] As discussed in Stainton (1995, 1998), the range of constituents that can function as in (73) is broad. For instance, Stainton (1995) calls (i) an "unembedded quantifier", arguing essentially as I have done here: it is a generalized quantifier, which applies to a contextually salient property.

(i) [Two speakers are at a linguistics meeting. Speaker A points to some empty seats at a table.]

Speaker A: "Anyone from *Pragmatics and Cognition*."

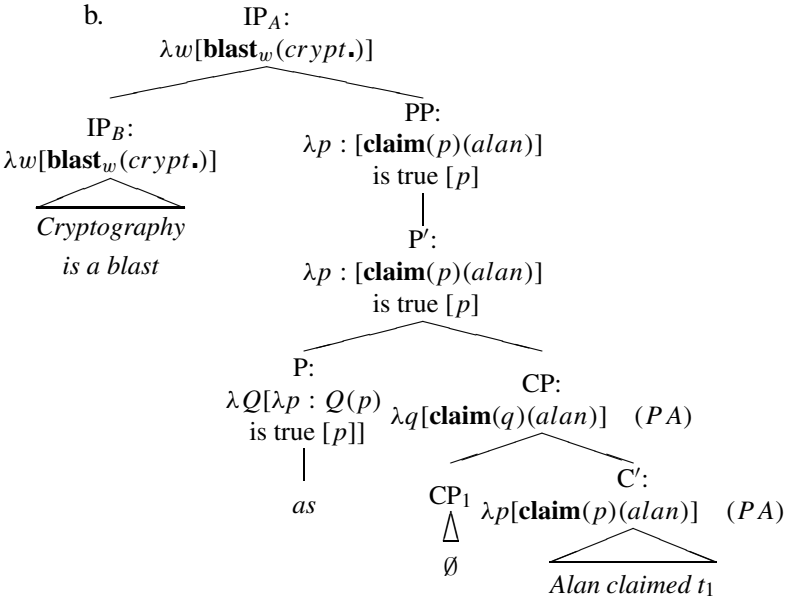
Stainton's arguments that this is not an ellipsis phenomenon are compelling.

3.2. *Adjoining the As-clause*

The above lexical entry and the arguments of section 2.4 yield the following picture for CP-*As* clauses. (The structures for Predicate-*As* are entirely parallel, except that they involve adjunction to a property-denoting constituent.)

(75)a. Cryptography is a blast, as Alan claimed.

b.



Using this version of **as**, IP$_A$ asserts only the proposition [λw [**blast**$_w$ ($cryptography$)]. But the conventional implicature associated with *As* means that the calculation cannot proceed to the IP$_A$ unless the *As*-PP applies to a proposition p such that Alan in fact claimed that p. Thus, an *As*-clause-containing CP entails both the content of the declarative and the content of the *As*-clause, but only the former is a proper (strictly truth-functional) entailment. In effect, the *As*-clause is a filter: it applies to a proposition, checks that the result expresses a truth, and then passes the proposition on unmodified.[17]

[17] A reviewer notes that the proposition expressed by *Hanssen is a spy* is easily extracted from (i) in a context in which the hearer knows it to be false that Kim suspects that Hanssen is a spy.

(i) Hanssen is a spy, as Kim suspects.

This indicates that the notion of truth specified in the denotation for *As*-morphemes must be relativized to the speaker's understanding of the world. But this is by no means specific

Adverbials like *still* and *even* arguably serve the same function, which highlights another respect in which *As*-parentheticals act like normal adverbials. I turn now to some differences that follow from the semantics proposed here.

3.3. *Some Welcome Consequences*

The above denotations are both specialized and restrictive. Fundamentally, they assert two things: (i) CP-*As*-clauses adjoin to all and only phrases that express propositions, and Predicate-*As* clauses adjoin to all and only property-level ones; and (ii) *As*-clauses cannot interact semantically with the clause they are embedded in, simply because they make demands only in the form of conventional implicatures. This subsection supports these aspects of the above denotations.

3.3.1. *Adjunction Flexibility*

A consequence of the lexical entries (70)–(71) is that the *As*-clause's only requirement for its trace/variable is semantic: the clause needs to apply to a proposition-type or property-level argument. This freedom is factually justified; the syntax imposes no restrictions on the type of phrase that can supply the meaning of the variable at the gap site, an insight that proves essential when it comes to ambiguous antecedents (see section 4). The following attested examples of syntactic 'mismatches' bolster a decision to let the semantics govern this aspect of adjunction, as is done in (70)–(71):[18]

(76) "This difference between A-binding and variable binding stands in the way of any attempt **to fully generalize A-binding across A′-binding**, as is proposed in Aoun's (1985) theory of generalized binding."

(James Huang. 1993. 'Reconstruction and the Structure of VP: Some Theoretical Consequences', *Linguistic Inquiry* **24**, 105, nt. 3.)

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to *As*-clauses. For example, a hearer who knows that Ali's prowess as a race-car driver is unsurpassed – i.e., a hearer who knows to be false the speaker's belief, expressed by *even*, that Ali is among the weakest drivers – can extract from (ii) the information that Ali completed the race.

(ii) The race was completed even by Ali.

I set this complication aside in what follows.

[18] Cf. *[To let the semantics govern this aspect of adjunction] is done in (70)–(71). Culicover and Jackendoff (1997) uncover a variety of mismatches of roughly this sort, though their interpretation of them differs from mine in its specifics.

(77) "It takes a synthetic comparative and superlative, and *enough* follows the head rather than **preceding it**, as it would if *near* were a preposition."

(Joan Maling. 1983. 'Transitive Adjectives: A Case of Categorial Reanalysis', in Frank Heny and Barry Richards (eds), *Linguistic Categories: Auxiliaries and Related Puzzles*, D. Reidel, Dordrecht, p. 270.)

(78) "He asks me if I've read Colette, then brings me up to date on the difficulties-of-**learning-to-play-the-piano-after-fifty**, as he's been trying to do and has talked about before . . ."

(Larry Woiwode, *What I Think I Did*, pp. 221–222.)

In none of these cases can the boldfaced phrase appear in the position of the *As*-trace:[19]

(79)a. *To fully generalize A-binding across A′-binding is proposed in Aoun's theory.

b. **Enough* would preceding the head if *near* were a preposition.

c. *He's been trying to do learning the piano after fifty.

[19] This is not to say that properties of the gap site are irrelevant. For instance, the fact that Predicate-*As* cannot target the objects of intensional verbs, even those forcefully argued to be property-denoting in Zimmerman (1993) and Moltmann (1997, §4.2), is probably due to the syntactic fact that such object positions are necessarily DPs.

(i) *Chuck resembles a werewolf, as Bill resembles.

As noted above, Postal (1994, §2.4) and Potts (2002) show that the gap in *As*-clauses cannot be a DP gap. Note that (i) does not indicate a complete ban on nominal targets for *As*-clauses. Predicate nominals are fair game, as are (e.g.) the nominals in the 'naming' context discussed in Postal (1998, §2.2.4), the antipronominal nature of which suggests that it does not host a DP.

(ii)a. You can call me Eddie, but I won't call you Al / *it.

b. "Last year, I visited Joan Mitchell Blumenthal, as she is now called, . . ."

(John Cassidy, 'The Fountainhead', *The New Yorker*, 24 April, 1 May 2000, p. 167.)

3.3.2. *Adjunction Limitations*

The lexical entries also explain why *As*-clauses are syntactically more restricted than regular adverbials in the realm of matrix-CP adjunction. As seen in section 2.3.1, *As*-clauses share with regular adverbials an inability to adjoin to embedded CPs (McCloskey 1999). But McCloskey (1999) goes on to observe that adjunction to root CPs is permitted, which leads him to formulate the adjunction restriction in terms of selected phrases. He provides (80). ((80c) is his (18b), slightly modified).

(80)a. Next Christmas, whose parents should we go to?

b. Most of the time, do you understand what's going on?

c. When you got home, what did you bake?

As-clause adjunction to CP is blocked in such configurations:[20]

(81)a. *As you said, whose parents should we go to?

b. *As your professor suggested, do you understand the paper?

c. *As they proposed, what did you bake?

This is expected given the denotation of *As* and the semantics of questions. Assume, Hamblin (1976)–Karttunen (1977)-style, that the matrix CP in (81b) denotes a set of propositions:

(82) $\lambda p[p = \lambda w[\textbf{understand}_w(\textit{the-paper})(\textit{you})] \vee$

$\neg\lambda w[\textbf{understand}_w(\textit{the-paper})(\textit{you})]]$

Then it is not a suitable input for the *As*-clause, which is a function from propositions to propositions. Similarly, the *Wh*-type question (81c) denotes:

(83) $\lambda p[\exists x : \lambda w[\textbf{bake}_w(x)(\textit{you})] = p]$

[20] A reviewer finds (i) acceptable:

(i) As you asked, whose parents should we go to?

(ii) *as you asked* $t_1 \rightsquigarrow \textbf{as}(\lambda P_{\langle\langle s,t\rangle,t\rangle}[\textbf{ask}(P)(\textit{you})])$

For this speaker, *as* must have an alternate denotation that determines a clause that is a partial identity functions on *sets of propositions*, in order for function application to proceed in (ii). I have never encountered a naturally occurring example involving an *As*-clause gap as the complement to a verb that takes only an interrogative complement.

So the highest CP in (81c) has daughters of type $\langle\langle s, t\rangle, t\rangle$ and $\langle\langle s, t\rangle, \langle s, t\rangle\rangle$. Function application is helpless with this pair.

Where there is no type-mismatch at the CP level, *As*-clauses behave like adverbials:

(84)a. Next Christmas under no circumstances will I be willing to cook dinner.

b. As I said, under no circumstances will I be willing to cook dinner next Christmas.

The grammaticality of (84b) shows that *As*-clause adjunction to a root CP is possible, but only if the result can be semantically composed.

Polar and *Wh*-interrogatives act differently when they contain *As*-clauses:

(85)a. Do you$_1$, [$_{VP}$ as your assignment suggests, [$_{VP}$ t$_1$ understand the material]]?

b. *What$_1$, as your assignment suggests, do you understand t$_1$?

b′. *What$_1$ do you, as your assignment suggests, understand t$_1$?

b″. *What$_1$ do you understand t$_1$, as your assignment suggests?

The successful niching in (85a) follows from left-adjunction to the VP, as indicated. But the VPs in the (b) cases contain the unbound traces of the *Wh*-extractees. If the context were such that an appropriate interpretation could be assigned these traces, then the question itself would be unnecessary. But this is just what is required if the *As*-clause's input is to be $[\lambda w[\mathbf{understand}_w(x_1)(you)]]$, since the content of the *As*-clause is conventionally implicated.[21]

[21] Contrasts like (i)–(ii), due to Quirk et al. (1985, §15.55), are another win for the denotations offered here.

(i) George is, as you said, a liar (*but I don't believe it).

(ii) George is, you said, a liar (but I don't believe it).

Since my analysis assigns (i) the same truth conditions as *George is a liar*, the weirdness of disbelief in that follows. And since the *As*-clause's content is implicated to be true, denying belief in its content is also impossible for the speaker to do consistently. So the *but*-continuation has no coherent reading. In contrast, *sliftings* like (ii) (Ross 1973) probably involve something closer to extraction of the declarative from complement position.

3.3.3. *As-clauses under Operators*

An important, though perhaps suspicious, function of entry (70)–(71) is that they remove the *As*-clause from the semantics proper; the content survives only as a conventional implicature. That this is a correct analysis is evident from a consideration of (86).

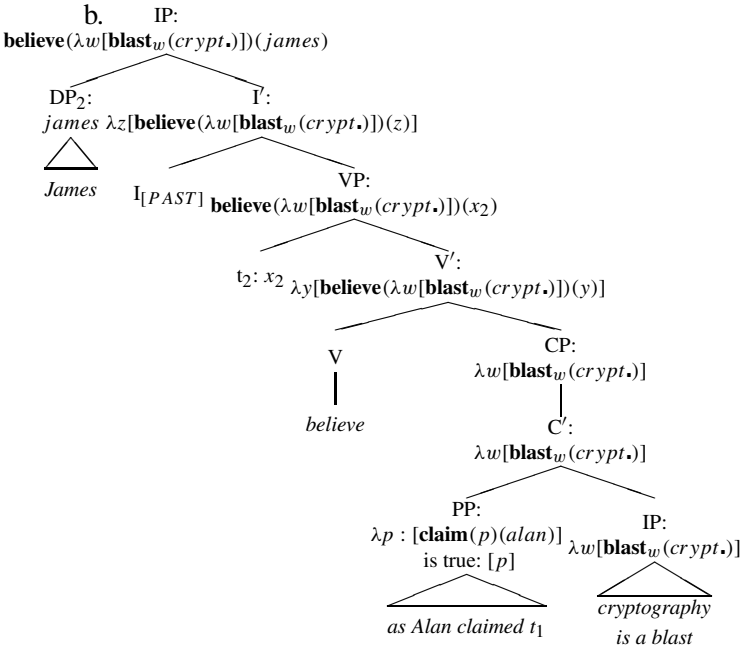
(86)a. James believes that, as you said, space has four dimensions.

b. James was certain ten years ago that, as Wiles proved the other day, Fermat's Last Theorem is correct.

These cases show that when an *As*-clause-containing CP is embedded below a propositional attitude verb, the content of the *As*-clause is not included in the content of the verb's argument. (The logic of this argument is borrowed from the Karttunen and Peters (1979, §5), analysis of *even*). So, for example, the content of the *As*-clause in (86) is not asserted to be part of what James was certain of ten years ago. If it were, this sentence would assert that James was certain ten years ago that Wiles proved Fermat's Last Theorem yesterday. An unlikely state of affairs; the sentences would be infelicitous if the *As*-clause were included in the value of the CP complement.

The above lexical entries make correct predictions about these cases; see (87).

(87)a. James believes that, as Alan claimed, cryptography is a blast.



The semantics of the lower CP shows no direct effect of the presence of the *As*-clause, which is, again, just a restriction on admissible contexts.

More evidence of this nature comes from sentences containing multiple *As*-clauses:

(88) [$_{PP_1}$ As the senator asserted on Monday], Ames sold, [$_{PP_2}$ as his wife had admitted by that Wednesday], many vital secrets to the enemy.

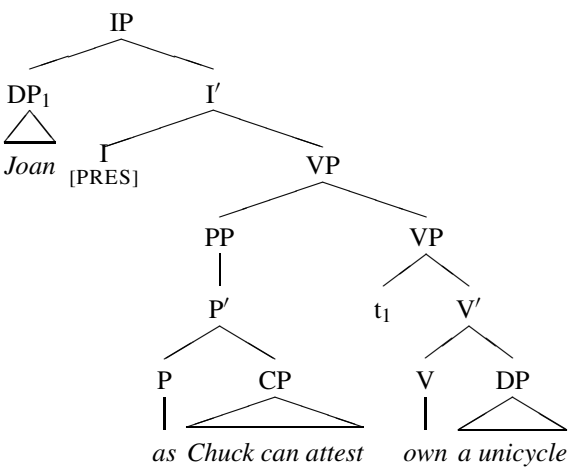
The sentence-initial *As*-clause in (88) must be adjoined as high as IP. This IP contains the lower *As*-clause, PP_2. And yet PP_2 is not necessarily a part of the senator's assertion; indeed, the temporal modifiers make the knowledge of PP_2's content inaccessible to the senator. This, too, is a effect of the semantics of *As*.

3.3.4. *Some Necessarily Free Variables*

The structure that I have proposed for cases like (89a) sets up c-command relationship between the subject and the *As*-clause, as in (89b):

(89)a. Joan, as Chuck can attest, owns a unicycle.

b.



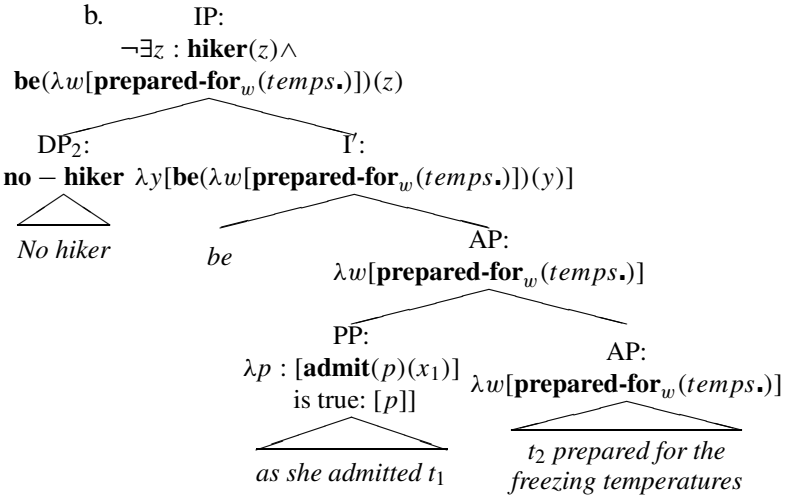
Given only this structure, one would expect a quantified subject to be able to bind into the *As*-clause. This is not the case, however:

(90)a. *No hiker$_1$ was, as she$_1$ admitted, prepared for the freezing temperatures.

b. *Every student$_1$ has, as he$_1$ promised he$_1$ would, turned in a paper on serial verbs.

The pronouns in (90b) have marginal E-type readings, impossible in the negative context (90a). Neither of these cases manifests true binding. This follows from the account developed so far. To see this, consider the (slightly simplified) structure and annotated derivation of (90a):

(91)a. *No hiker$_1$ was, as she$_1$ admitted, prepared for the freezing temperatures.



Quite simply, variable-binding into *As*-clauses is impossible because the semantics of the *As*-clause does not 'escape' the *As*-clause itself. Thus, if a pronoun P internal to an *As*-clause A remains unbound in A, then P can have only a deictic (or possibly E-type) use – i.e., it must get its value from the assignment function. This is the case for *she* (= x_1) in (91). This point is worth stressing: the required function for variable binding is, roughly,

$$\lambda x[\textbf{admit}(\textbf{prepared-for-temps}(x))(x) \wedge \textbf{prepared-for-temps}(x)]]$$

But this is not the denotation of any node in (91), nor does (or can) anything comparable be expressed in this structure.[22]

I stress that this is *not* a claim that it is impossible to bind into material that is *presuppositional* or *conventionally implicated*, or contains such information. Rather, the above semantics makes the more specific claim that it is impossible to bind into material that contributes *only* in these terms, but is absent from the compositional semantics itself.[23] More specifically, what makes binding into *As*-parentheticals impossible is that they are *identity* functions. Thus, although both *realize* and *As*-morphemes make demands on the context and hence can be conceived of as *partial* functions, only *As*-parentheticals are in addition *identity* functions. A reasonable meaning for *realize* is $[\lambda p : p\ is\ true\ \lambda x[\textbf{realize}(p)(x)]]$, which captures the fact that p must be true if the sentence is to denote.

[22] Some speakers claim to allow variable binding into such parentheticals. But most of the speakers I have queried do not; the latter judgments are supported by the literature on parentheticals; see, e.g., Lapointe (1991), McCawley (1998, §13b), and Krause (2001).

[23] I thank Daniel Büring, Luisa Marti, and an anonymous *NLLT* reviewer for helping me appreciate the importance of this point.

But, importantly, any pronoun in the propositional argument to **realize** is available for binding, because the complement contributes both to the semantics proper and also to defining the contextual background; *No trucker*$_1$ *realized she*$_1$ *was late* translates as **no-trucker**(λx[**realize** (**late**(x)]), with the pronoun in the presupposed proposition present as a variable. This contrasts with the pronoun *she* in (91), which, by virtue of the identity function it is contained in, cannot get bound by **no-hiker**.

The same logic explains why *As*-clauses form Locked Islands – constituents from which nothing can extract (Postal 1997, 1998); see (92).

(92)a. *[Which campers]$_1$ did you say that, as Sally told t$_1$, we should avoid the switchblade-toting thugs?

b. *[Maximally D-linked Billy]$_1$, extraction just won't work, as Sally admitted to t$_1$.

Again, if one considers only structural relations, (92) is surprising. *As*-clauses are syntactic adjuncts. One would thus expect the argument DP extractees in (92) to escape relatively freely. But these things are crashingly bad. However, given that the semantic value of the *As*-clauses – e.g., [λw[**admit-to**$_w$(p_1)($sally$)]] in (92b) – does not survive into the matrix clauses, the trace of the movement, t_1, cannot be bound from the *As*-clause external landing sites in these examples. The result is an improper A′-chain: the trace has no binder, and the extractees have nothing to bind.[24]

[24] The situation with regard to Condition C effects is less clear. The absence of such effects in cases like (i) can be handled using a condition, such as the one proposed in Reinhart (1983) (also Heim 1998; Sharvit 1999), that makes coreference contingent on the impossibility of semantic binding.

(i) ?She$_1$ owns, as Sue$_1$ told us, a dozen or so unicycles.

(ii) She$_1$ owns, as the transcripts indicate that Sue$_1$ told us, a dozen or so unicycles.

(iii) In the end we convinced her$_1$ that Condition C is a pragmatic constraint, as Sue$_1$'s own advisor had been trying to tell her for weeks.

But the fairly clear lack of the indicated reading of (iv) suggests that something more complicated is at work here.

(iv) *He$_1$ told his$_1$ mom that, as Julio$_1$ had promised, the dishes were done.

3.4. *Conclusion*

The above analysis for *As*-type morphemes captures directly the conventional implicature associated with such clauses. Too, it provides a natural explanation for their Locked Island nature and the impossibility of binding into them. Additionally, since the gap in the *As*-clause and the material that supplies its meaning are connected only by the semantics, the analysis properly allows for apparent syntactic mismatches of the sort evidenced in section 3.3.1. These elements combine to account for the range of interpretive ambiguities I now turn to.

4. SOME 'IGNORED' NEGATIONS (AND OTHER OPERATORS)

This section shows that the above account of *As*-clauses provides the basis for a natural description of a range of surprising ambiguities in the interpretation of both CP- and Predicate-*As* clauses, an ambiguity that is unique to these structures, yet holds uniformly in all the languages I've investigated. (93) provides a clear example of *As*-clause selectivity.

(93) Alger was not a Communist, as Joe claimed.

a. *As*-clause = Joe claimed Alger was not a Communist

b. *As*-clause = Joe claimed Alger was a Communist

For interpretation (93b), the *As*-clause appears to 'ignore' the negation in the main clause Alger was not a Communist, finding instead the 'non-negated' proposition $[\lambda w[\mathbf{communist}_w(alger)]]$. The result is what I call the non-negated reading of the *As*-clause. In section 4.1, I show how the proposals of sections 2 and 3 combine with well-motivated assumptions to yield a natural account of this ambiguity, as well as others involving similar structural configurations. Additional data, presented mostly in section 4.3, demand some theoretical tinkering. In particular, *As*-morphemes can ignore negated subject and object quantifiers. Ladusaw's (1992, 1996) conception of negation provides an elegant treatment of these new facts.

In section 4.5 I briefly consider, and reject, an alternative hypothesis that non-negated readings are due to metalinguistic use of the negation operator. Section 4 closes with some observations about the interaction with nichings and 'ignored' negations.

4.1. *A Description of the Basic Non-Negated Readings*

Some naturally occurring examples of non-negated readings in English are given in (94)–(96), where either an adverbial or the context result in a favored non-negated reading.[25] For perspicuity, the prominent, non-negated reading is paraphrased below each example.

(94) "Napster's real significance is to have proved that downloading music isn't merely a fad, as most music execs had hoped."

(James Surowiecki, 'Can the Record Labels Survive the Internet?', *The New Yorker*, 5 June 2000, p. 35.)

As-clause = most music execs had hoped that downloading music is (merely) a fad

(95) "The four companies filing with the Food and Drug Administration are not suing Michigan State University, as the authors state. They are being sued by Research Corporation Technologies to prohibit such sale and production."

(Barnett Rosenberg, Letters Column, *The Atlantic Monthly*, June 2000, p. 6, column 1.)

As-clause = the authors state that four companies ... are suing Michigan State University

[25] This is a difficult issue. For cases like (96), the negated reading is presumably filtered off by the Law of Contradiction; such would amount to *the issue is gender and the feminists are incorrect to think the issue is gender*, a contradiction. I suspect that the effect these negative adverbs have on the ambiguities (which is mirrored by their positive counterparts) is part and parcel with the fact that *As*-clauses containing factive verbs allow only the strictest (all operator-inclusive) readings, even when niched so as to encourage a non-negated one. For example, (i) cannot mean (ii):

(i) Ames might not, as the senators realize, have been a spy.

(ii) Ames might not have been a spy, and the senators realize Ames might have been a spy.

Odder still is the fact that factive-containing *As*-clauses seem not to give rise to non-modalized reading either:

(iii) Ames might, as the senators understood, be a spy.

My proposals do not differentiate these cases from ones that harbor ambiguities. My guess is that attention to the pragmatic conditions governing the various interpretations of *As*-causes is the key to settling this issue.

(96) "It should be obvious from this example that the issue is not gender, as feminists incorrectly thought, but the division of labor . . . "

(Barry Stoller, *Harper's Magazine*, June 2000, Letters section, p. 12, column 1.)

As-clause = feminists incorrectly thought that the issue was gender

This is by no means a privilege of English *as* (though it is unique to *As*-clauses; see section 4.5). Non-negated readings are available in the *As*-clauses of all the languages that I am confident have *As*-type parentheticals. A small sample:[26]

(97) DANISH

Ames var ikke spion, som folketingsmedlemmerne (ellers)

*Ames was not spy, as parliament.members.*DEF *otherwise*

påstod.

claimed

Ames was not a spy, as the senators (otherwise) claimed.

(98) GERMAN

Er hat die Antworten nicht gestohlen, wie der Lehrer

he has the answers not stolen as the teacher

(zu Unrecht) behauptet.

unfairly maintains

He did not steal the answers, as the teacher (unfairly) maintains.

The semantics for *As* formulated in section 3 is nicely situated to handle these facts. Recall that, in the case of CP-*As*, the clause's only requirement is that it adjoin to a proposition-type argument, for function application;

[26] The ambiguity in the German examples comes as a surprise. German has an equally efficient construction that unambiguously conveys the information of the non-negated (98), namely, clauses headed by *anders als* (roughly, 'differently than' or 'contrary to'):

(i) Er hat die Antworten nicht gestohlen, anders als der Lehrer behauptet.

he has the answers not stolen differently than the teacher maintains

He did not steal the answers, contrary to what the teacher claims.

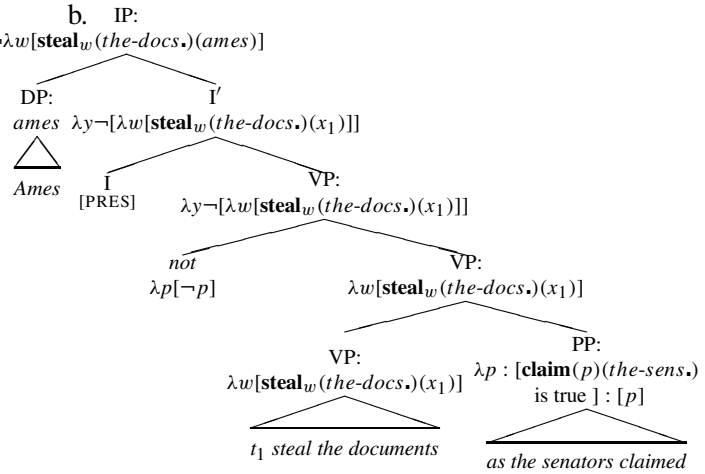
I have not investigated the extent to which *anders als*-headed clauses resemble *As*-clauses.

the syntactic status of the constituent that expresses the proposition plays no role, a move that gains direct support from the naturally occurring sentences in (76)–(78), which flaunt syntactic well-formedness.

On the VP-Internal Subject Hypothesis the VP itself provides such a proposition. If one assumes furthermore that the negations in all of (94)–(98) are VP-external, then the VP constitutes a non-negated proposition. Adjunction of the *As*-clause to this constituent (function) thus produces a non-negated interpretation of its variable. I illustrate with a simple case in (99).[27]

(99)a. Ames did not steal the documents, as the senators claimed.

b.



An important thing about (99b) is that, despite being in the syntactic scope of *not*, the *As*-clause is not itself negated, for two reasons: its content is conventionally implicated to be true, and it does not form part of the argument of *not*.

The same analysis delivers two readings for adverbials like *never* and *no longer*. Like the sentential negation, they are VP-external, hence 'ignorable'. I cite some attested English cases first:

(100) "The pentagon says the Chinese embassy never informed it of the purchase, as is required . . ."

(NPR News, *Morning Edition*, 28 June 2000.)

[27] For cases such as this one, in which the subject is a referring expression, it is possible to obtain the correct reading by assuming that assignment function determines that the variable x_1 denotes *Ames*. But when the subject is inherently quantification, this is not possible. Thus, it must be that such subjects can reconstruct into the VP. There is extensive independent evidence that such reconstruction is possible; see, e.g., Fox (2000).

(101) "This leads to a new conception: incorporation is no longer an essentially objective process, as had usually been assumed and as the writer accepted for purposes of refutation, but is non-syntactical in nature."

(A.L. Kroeber, 'Incorporation as a Linguistic Process', *American Anthropologist* **13**, 578.)

(102) "This is a song that has lately been denounced . . . for creating 'the impression that New York's police officers are a bunch of trigger happy cowboys' (John Tierney, in the *Times*) . . . Springstein was never likely, as Tierney claimed, 'to play to the mob.' His audience is not a mob."

(Hendrik Hertzberg, 'Comment: cops and wallets', *The New Yorker*, 3 July 2000, p. 26, column 1.)

Example (102) is particularly exotic. If Tierney (a columnist) claimed "Springstein is likely to play the mob", then it involves an ignored *never*. But the *As*-clause could also apply to the argument expressed by the infinitive *to play the mob*, a subject raising case that expresses $[\lambda w[\textbf{play-to-the-mob}_w(x_1)]]$, where $x_1 = g(1) =$ *springstein* (g an assignment function). On my analysis, there is no important distinction between these two readings, nor do they differ from straightforward cases lacking 'ignored' negations and semantic mismatches. In all *As*-clause structures, the linguistic material to which the *As*-clause adjoins makes a set of proposition-type constituents available. In cases of right-adjunction like (102), this set often contains more than one non-equivalent proposition. Ambiguity results.

Similar strings yield ambiguities in Thai, German, and Danish:

(103) THAI

Elia mai kʰəy pen saʔmaa.cʰik pʰak commuunit, yaaŋ tʰii Joe
Elia NEG *ever be member party communist as C Joe*
duu.mɨan waa caʔ cʰɨa.
seem C will believe
Elia was never a member of the Communist Party, as Joe seems to believe.

(104) DANISH
Elia var aldrig medlem af det danske kommunisparti, som
Elia was never member of the Danish Communist Party, as
Joe (fejlagtigt) synes at tro.
Joe (falsely) seems to believe
Elia was never a member of the Communist Party, as Joe seems (wrongly) to believe.

(105) GERMAN
Elia war nie Mitglied der Kommunistischen Partei wie Joe
Elia was never member of-the Communist Party, as Joe
(fälschlich) zu glauben scheint.
wrongly to believe seems
Elia was never a member of the Communist Party, as Joe seems (wrongly) to believe.

All of (103)–(105) have the interpretations in (106). (The *fejlagtigt* 'falsely' version of (104) and the *fälschlich* 'wrongly' version of (105) might lack non-negated readings; see footnote 25.)

(106)a. *As*-clause = Joe seems to believe Elia was never a member of the Communist Party

b. *As*-clause = Joe seems to believe Elia was (once) a member of the Communist Party

These cases are structurally identical to the sentential negation ones discussed above, and can thus be similarly analyzed. I refrain from providing a derivation, to save space for the juicier stuff to come.

4.2. *Other 'Ignored' Operators*

The above description does not appeal to a property of negation *per se* in accounting for the ambiguities. What is crucial is that there is a proposition-type function that excludes the operator in question. Thus, unless something more – something quite ugly and *ad hoc* – is said, any operator that bears this exclusionary relation to a proposition is ignorable. The data in this section suggest that the freedom is welcome.

First, VP-external adverbs like *always* are ignorable. The parenthesized material in (107) basically cancels the universal – i.e., IP-adjunction – (a) reading:[28]

(107) Fred has always been friendly, as Joan said (after each of the two times she talked to him).

a. *As*-clause = Joan said Fred has always been friendly

b. *As*-clause = Joan said after each of the two times she talked to him that Fred was friendly

A second set of predicted, and prominent, ambiguities concerns the interpretation of tense and aspect. Consider the sentences in (108) and (109), which have the readings indicated:

(108) Ames was a spy, as the senator stated.

a. *As*-clause = the senator stated Ames was a spy

b. *As*-clause = the senator stated Ames is a spy

(109) Al might be a liquor smuggler, as the Feds maintain.

a. *As*-clause = the Feds maintain that Al might be a liquor smuggler

b. *As*-clause = the Feds maintain that Al is a liquor smuggler

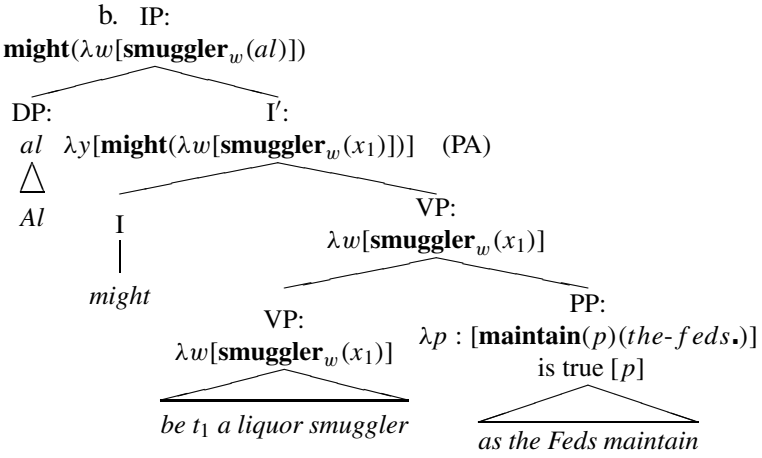
The (a) readings are expected. They arise when the *As*-clause applies to the entire initial declarative. The (b) readings, in which, respectively, tense and modality information are ignored, receive an equally straightforward description. These result from *As*-clause adjunction below IP, where this information is housed. For concreteness, I provide the structure for the non-modalized reading of (108). First, (110) provides a rough-and-ready *might*. (I assume an S5-type (complete) accessibility relation on worlds.)

(110) **might** = $\lambda p[\exists w : p(w)]$

[28] Thanks to Jorge Hankamer (p.c. 10/00) for providing this example.

(111)a. Al might be a liquor smuggler, as the Feds maintain.

b.



The above can be re-cast in terms of tense, also located in I^0. So, without modification, the two interpretations follow.

4.3. *Trickier Non-Negated Readings*

The ignored sentential and adverbial negations are just special cases of a more general negative dodge. In particular, negated subjects and objects of an anti-additive sort allow non-negated readings, across languages as far as I know:

(112) "Neither alleged incident was reported by the 24th division to the appropriate higher authorities, as was mandated by the Army's operations order for the Gulf War."

(Seymour M. Hersh, 'Overwhelming Force', *The New Yorker*, 22 May 2000, p. 51.)[29]

[29] The preceding discourse shows that the negation in *neither* is ignored:

"The most serious allegation involved the shooting of prisoners by soldiers in the 1st brigade. ... The second accusation came from a group of soldiers assigned to the 124th Military Intelligence Battalion, whose senior sergeant claimed that on March 1st, the day after the ceasefire, he saw an American combat team open fire with machine guns upon a groups of Iraqis in civilian clothes who were waving a white sheet of surrender. ... **Neither alleged incident was reported by the 24th division to the appropriate higher authorities, as was mandated by the Army's operations order for the Gulf War.**"

(113)a. THAI

mai.mee k^hrai nai k^ha?.na? pen sa?.paai yaaŋ t^hii Trudy
no.one who in department is spy as C Trudy
?aaŋ (yaaŋ p^hit.p^hit).
claim (how wrongly)
No one in the department is a spy, as Trudy (wrongly) claims.

b. DANISH

Ingen på instituttet er spion, som Trudy (fejlagtigt)
*no.one in department.*DEF *is spy, as Trudy (falsely)*
påstod.
claimed
No one in the department is a spy, as Trudy (wrongly) claimed.

i. *As*-clause = Trudy claimed that no one in the department is a spy.

ii. *As*-clause = Trudy wrongly claimed that someone in the department is a spy.

Similarly, though they are rarer and difficult to get, non-negated readings of objects are attested independently for English in (114) and German in (115). My informants tell me that parallel facts hold in Thai and Danish, as seen in (116)–(117).

(114) "There was no effort to destroy the buildings or tear them down, as has been alleged by the plaintiffs in this case."
(U.S. Attorney Michael Bradford, *Morning Edition*, National Public Radio, 19 June 2000; Wade Goodman's report on the Branch Davidians' wrongful death case against the FBI; the plaintiffs are the Branch Davidians.)

(115) GERMAN

Die PLO war 1968 keine straffe politische Einheit, wie sie
the PLO was 1968 no organized political unit, as they
vorgab.
presented
The PLO was in 1968 no organized political unit, as they pretended.
(Ken Follett, translated by Bernd Rullkötter, *Dreifach*, p. 736 (Bastei Lübbe Jubiläums-Ausgabe).

(116) THAI

Sid mai dai k^ha?moy ?a.rai caak hɔŋ.sa?mut, yaaŋ t^hii Trudy
Sid not steal whatever from library as C Trudy
?aaŋ (yaaŋ p^hit. p^hit)
claim (how wrongly)
Sid stole nothing from the library, as Trudy (wrongly) claims.

(117) DANISH

Sid stjal ikke noget fra biblioteket, som Trudy
*Sid stole not something from library.*DEF *as Trudy*
(ellers / fejlagtigt) påstod.
(otherwise / falsely) claimed
Sid stole nothing from the library, as Trudy (otherwise/wrongly) claimed.

Importantly, Predicate-*As* is also capable of ignoring negation in this way. For instance, the intended readings of (118)–(119) involve interpreting the object as an indefinite.[30]

[30] The context makes clear that a non-negated reading is intended:

On page 70 it is reported that, in 1922, the police had searched Judge Sirica's father's poolhall and found bootleg liquor. "Circa 1993 his father owned a barber shop, one likely involved in similarly illegal activities. But **there were no embarrassing misunderstandings, as there had been at the time of the pool hall, at any police station**."

(118) "There were no embarrassing misunderstandings, as there had been at the time of the pool hall, at any police station."
(Renata Adler, 'A Court of No Appeal', *Harper's Magazine*, August 2000, p. 72, column 3.)

(119) "Indeed, in these cases, there is no general relationship between a 'noun incorporation' structure and an unincorporated counterpart, as there is in Onondaga and Southern Tiwa."
(Mark Baker, *Incorporation*, p. 78.)

The account as developed so far cannot describe these facts; it predicts an absence of non-negated readings, because there is apparently no constituent that contains the required content yet excludes the negated DPs. For the subject cases, one might appeal again to the VP-Internal Subject Hypothesis, claiming that existential closure takes place over the VP, say via the adjunction of an ∃-operator. The *As*-clause could target this larger constituent. But the VP does not contain the restriction of the raised quantified DP. Thus, the ∃-closure view predicts that examples like *No student was a spy, as Trudy claimed* have readings in which Trudy claimed that someone or other was a spy, not necessarily a student. Such readings are nonexistent.

The ∃-closure account can dodge this problem by employing a version of the copy theory of movement: if a raised subject leaves (a copy of) its restriction inside the VP, then the proper semantic value results. But ∃-closure remains unsatisfactory, for two reasons: (i) it entails an *ad hoc* introduction of an ∃-operator, complicating both the structures and the semantics; and (ii) it leaves the ignored object negations unaccounted for. The next section pursues a more fruitful alternative, one capable of capturing these facts in a unified (but periphrastic) way.

4.4. *A Ladusavian Solution*

In Ladusaw's (1992, 1996) view, negation in Negative Concord languages is expressed not by the negative morphemes themselves, but rather by an abstract, clause-level negation that enters into a mutual licensing relationship with the negative(-looking) morphemes.[31] An adaptation of this theory to Standard English would take the classic N-words to be, optionally, negative polarity items (NPIs) – i.e., licit if and only if accompanied by a clause-level negation.

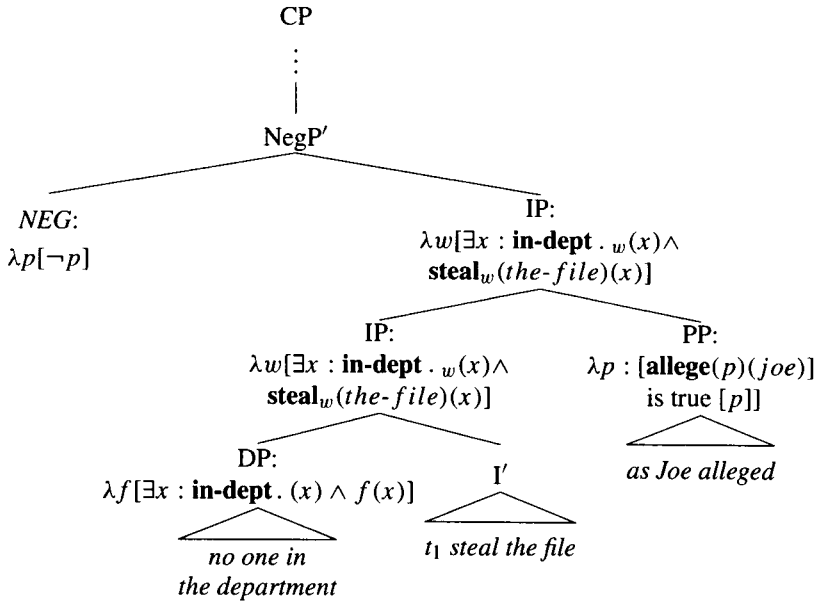
[31] The proposal resembles McCawley's (1973) analysis of negation. But McCawley treats *not* as a verb. See also Kratzer (1995) for the 'split' readings of the German determiner *kein* ('no'). For additional evidence of split readings in English, see Potts (2000).

Adopting this view means that the initial declarative in (120a) is at least optionally of the form (120b), which provides the needed ingredient (function) for a non-negated reading; see (120c).

(120)a. No one in the department stole the file, as Joe alleged.

b. [$_{CP}$ [$_{NegP}$ *NEG* [$_{IP}$ someone in the department stole the file]]]

c.



Non-negated object cases work in the same fashion.

There is a small redundancy in the above account. Both *not* and *never* can yield non-negated readings either by appearing in their NPI guises, or else via *As*-clause adjunction to VP (regardless of the semantics of the negative morphemes). In contrast, only an NPI appearance of a negated subject or object can yield a non-negated reading of those clauses. This is perhaps inelegant, but it does correlate roughly with the ease with which speakers get non-negated readings.[32]

[32] Moltmann (1997, §4.2) observes that a split analysis of negative DPs is possible for basic cases, but cannot extend to DPs of the form *no . . . except NP*, since *except* modification is incompatible with indefinites. Thus, non-negated readings of these modified forms

4.5. *A Metalinguistic Hypothesis*

Although we seem to have tamed the negative ambiguities without too much trouble, they require a systematic ambiguity for negative morphemes. It is perhaps natural, therefore, to explore an alternative explanation for them, one that appeals to a less controversial aspect of negation: its *metalinguistic* uses, in the sense of Horn (1989, §6.4.3). A typical, clearly metalinguistic negation is (121), from Horn (1989, p. 370). Here, *not* cancels only the implicature of *some* to *not all*.

(121) *Some* men aren't chauvinists – *all* men are chauvinists.

But all evidence known to me argues that there is no necessary connection between non-negated readings and metalinguistic operators.

First, the superficially similar *slifting* construction does not display the ambiguity, nor do nonrestrictive relatives or *so*-proform clauses.[33]

(122) Ames was not a spy, Joe (wrongly) claimed.
  a. Slifting = Joe claimed that Ames was not a spy
  b. Slifting ≠ Joe wrongly claimed that Ames was a spy

(123) Ames was not a spy, which Joe (wrongly) claimed.
  a. *which*-clause = Joe claimed that Ames was not a spy
  b. *which*-clause ≠ Joe wrongly claimed that Ames was a spy

(124) Ames is not a spy. And/or so they said
  a. *so*-clause = they said Ames was not a spy
  b. *so*-clause ≠ they said Ames was a spy

should be unavailable (the semantically similar *besides* is not so restricted). This is quite clearly correct, as seen in (i) (cf. (120))

(i) No one in the department except Ames was a spy, as Joe alleged.
  a. *As*-clause = Joe alleged that no one in the department except Ames was a spy
  b. *As*-clause ≠ Joe alleged that someone in the department except/besides Ames was a spy

[33] See Potts (2002) for an account of the absence of non-negated readings of nonrestrictive relatives based on the limited range of adjunction sites for such clauses.

If non-negated readings are due to a metalinguistic use of the negative operator, then there is no reason why such a use should be impossible in these minimally different cases. After all, it is, by hypothesis, a feature of the initial declarative, specifically the extra-grammaticalness of its negation, that delivers a non-negated reading. The nature of the affixed appositive or parenthetical should be irrelevant.

Second, the negations in question fail all Horn's (1989, §6.4.3) tests for metalinguistic negation. First, Horn observes that metalinguistic negations cannot "incorporate". He does not define 'incorporation', but intends *neither . . . nor* to manifest negative incorporation of the relevant kind. He cites the contrast in (125).

(125)a. Maggie isn't either patriotic or quixotic – she's both!

b. #Maggie is neither patriotic nor quixotic – she's both!

As Horn (1989, p. 394) says, (125a) "can be used as a metalinguistic negation, to make an indirect assertion which may in fact be true in a given context. However, this reading predictably disappears when the negation can only be descriptive, as in [(125b)]. Since such incorporated negation can only be descriptive, [(125a)] is unambiguous and [(125b)] logically contradictory".

Elsewhere, Horn makes clear that other incorporated negatives include "the neg-prefixed adverb *never*" (p. 455). But, as already seen in the above cases, both *neither . . . nor* and *never* manifest the ambiguity in *As*-clauses; see sections 4.1 and 4.3 above.

Horn also shows that "metalinguistic negation does not trigger negative polarity items" (p. 397). He supports this claim at length throughout §6 (see in particular §6.1 and §6.4.2). Among his examples is the contrast in (126), which is due to Karttunen and Peters (1979, pp. 46–47) (the negative polarity item is underlined).

(126)a. Chris didn't manage to solve the problem – it was quite easy for him.

b. *Chris didn't manage to solve <u>any</u> problems – they were quite easy for him.

Even the very weak negative polarity item *any* is not licensed by the metalinguistic negation employed in (126). Thus, (126b) is in a real bind: use a grammatical negation to license *any*, thereby rendering the continuation infelicitous, or use a metalinguistic negation to save the continuation, but leave *any* unlicensed.

Thus, if the ambiguities at issue were due to metalinguistic negation, the non-negated reading would disappear in the presence of a negative polarity item. But this is not the case:

(127) Alger did not do anything illegal, as Joe believed (the whole time / quite wrongly).

a. *As*-clause = Joe believed the whole time that Alger did not do anything illegal

b. *As*-clause = Joe believed wrongly that Alger did something illegal

(128) Alger didn't contribute a red cent to the commies, as Joe has claimed in the press.

a. *As*-clause = Joe has claimed that Alger didn't contribute a red cent to the commies

b. *As*-clause = Joe has claimed that Alger contribute to the commies

A parallel argument can be made on the basis of *positive polarity items* (PPIs) such as *pretty*, *somewhat*, and *absolutely*, which are unaffected by metalinguistic negation (Horn 1989, p. 401), but remain ungrammatical in the scope of (or must take wide scope with respect to) negation even when the *As*-clause is interpreted as non-negated.

I conclude that the ambiguity involves a narrowly grammatical use of negation and indeed reflects a property of *As*-clauses themselves.

4.6. *Some niching interactions*

A limitation on non-negated readings that I have yet to address is that the *As*-clause must follow the "ignored" negation. Thus, the examples in (129) are ambiguous, but those (130) can only assert that Joe believed that Alger was not a spy. (The intuition is sharpest for the fully fronted (130).)

(129)a. Alger_1 was not t_1 a spy, as Joe believed.

b. Alger_1 was not, as Joe believed, t_1 a spy.

(130)a. Alger_1 was, as Joe believed, not t_1 a spy.

b. Alger_1, as Joe believed, was not t_1 a spy.

c. As Joe believed, Alger_1 was not t_1 a spy.

The descriptive generalization is clear: the *As*-clause must follow its negation in order to ignore it. In the terms developed above, this has a straightforward technical translation: the *As*-clause must be able to adjoin to a suitable (proposition-expressing) constituent that excludes the negative morpheme. This is possible in (129), where it can left-adjoin to the predicate; in all of (130), the only constituent the *As*-clause can adjoin to is one that includes the word *not*.

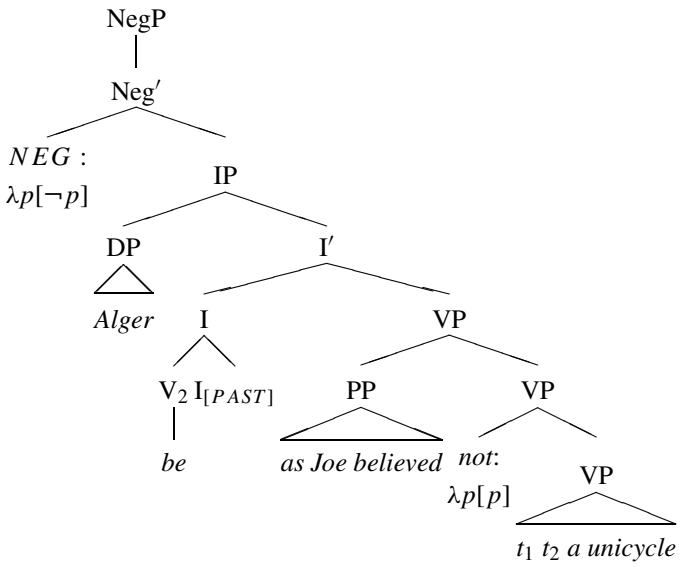
Unfortunately, the above proposals prove too flexible, predicting that all of these examples have both negated and non-negated readings. This is so because the negation associated with *not* can optionally be expressed in NegP, with *not* a vacuous particle. Thus, in (130b) for example, t_1 *was not a spy* should optionally express [**not**(**a-spy**($x1$))] where **not** is simply an identity function on propositions: [$\lambda p[p]$].

Although it requires an extra statement, the generalization is succinct and coherent:

(131) An *As*-clause cannot intervene (adjoin) between NegP and its associated vacuous negative morpheme.

With (131) in place, all of the examples in (130) demand that the negative morphemes directly express negation. If they appear as NPIs, they will not be licensed; see (132), which is illegitimate by (131), because *not* has a vacuous/NPI semantics but cannot be licensed as such due to the *As*-clause's adjunction to the dominating VP node.

(132) IMPOSSIBLE STRUCTURE, BY (131)



One might attempt to explain (131) by classifying *As*-clauses as *intervenors* of the sort that disrupt NPI licensing.[34] But intervenors are universals, and I see no basis for classifying *As*-clauses with, e.g., *every* and *always* but not *a* and *sometimes*. *As*-clauses denote functions from propositions to propositions (or properties to properties, in Predicate-*As* cases), and so should be harmless. What's more, *As*-clauses do not normally block NPI licensing.

(133)a. {No / *My} dog, as you said, did a blessed thing to help with the chores.

b. They have not, as the records indicate, filed their tax returns yet.

In spite of these challenges, independent evidence for (131) might be found in complex examples like (134), compared with (135), repeated from (114) above.

(134) There was, [$_{PP_1}$ as the report said], no effort to put out the fire, [$_{PP_2}$ as the FBI claimed].

a. PP_2 = the FBI claimed that there was no effort to put out the fire.

b. PP_2 = the FBI claimed that there was an effort to put out the fire.

(135) There was no effort to destroy the buildings or tear them down, as has been alleged by the plaintiffs in this case.

(U.S. Attorney Michael Bradford, *Morning Edition*, National Public Radio, 6/19/00, 8:40-50 a.m.; Wade Goodman's report on the Branch Davidians' wrongful death case against the FBI; the plaintiffs are the Branch Davidians.)

a. *As*-clause = That there was no effort to destroy the buildings . . . has been alleged by the plaintiffs in this case

b. *As*-clause = That there was an effort to destroy the buildings . . . has been alleged by the plaintiffs in this case

The current account predicts an absence of a non-negated reading for the lower *As*-clause in (134) – *as the FBI claimed* – because the higher

[34] See Linebarger (1980, 1987) for discussion of intervenors in the context of NPI licensing.

As-clause – *as the report said* – intervenes between *no effort* and NegP, blocking an NPI reading of *no* by (131). The correctness of this prediction is uncertain, however, some speakers allow the non-negated reading of (134b). It is my hope that more study of complex cases like this will lead, ultimately, to a statement that is preferable to (131).[35]

4.7. *Conclusion*

This section introduced a wide range of ambiguities unique to *As*-clauses, concerning negations of all types as well as tense and aspect information, and showed that the semantics proposed in section 3, in conjunction with an optional Ladusavian division of negative morphemes from their semantic strength, predicts the existence of these readings. I defended the theory from the hypothesis that the negative ambiguities result from a metalinguistic use of negation (4.5), and closed by documenting some cases where my analysis slightly overgenerates, adding Principle (131) to block them.

5. CLOSING REMARKS

The facts presented in sections 2.1–2.2 motivate an analysis in which *As*-clauses are prepositional phrases. These are headed by the *As*-morphemes themselves, which take CP complements. The obligatory gap in this CP is defined by an extracted null operator. The *As*-clause itself adjoins (right or left) to other maximal projections, subject to roughly the same syntactic restrictions as regular adverbial modifiers. Thus, for example, they can adjoin to root, but not embedded, CPs and they determine heavy shift/extraposition when they intervene between a verb and its argument (section 2.3).

There are other limitations on possible adjunction sites but these follow from the lexical entries for *As*-morphemes (70)–(71)), which makes four fundamental claims:

(136)i. *As*-morphemes conventionally implicate the truth of their complement; see (68) for illustration.

[35] Example (i) presents another challenge. It cannot be interpreted to mean *It is not the case that Ames might be a spy*, even though there appears (marginally) to be a reading of the *As*-clause that includes the modal but excludes the negation.

(i) Ames might not be a spy, as the senators claimed.

I do not presently have an explanation for this reading of (i).

ii. The *syntax* places no conditions on the constituent that supplies the meaning of the *As*-clause's propositional or property-type trace/variable; see (76)–(78).

iii. The semantic content of the *As*-clause is the semantic content of its argument – and nothing more. That is, the root node in a CP like *Ames, as you said, was a spy* translates as $[\lambda w[\textbf{a-spy}_w(ames)]]$.

iv. The argument of the *As*-clause must be proposition- or property-denoting (depending on the type of the trace). This is a consequence of the lexical entries (70)–(71).

Claim (iii) accounts for the impossibility of variable binding into *As*-clauses (3.3.4) and their Locked Island nature, since any variable internal to an *As*-clause that is not bound within that *As*-clause must remain free (i.e., obtain its meaning from the assignment function). It simply isn't present in the argument of the relevant functor.

Assuming that function application is the mode of semantic composition, it follows from (ii) and the freedom of adjunction allowed by the syntax that *As*-clauses can adjoin to any phrase that is semantically propositional or property-denoting. This properly allows for apparent syntactic mismatches and accounts for certain adjunction limitations not shared by other adverbials. Assuming the VP-internal Subject Hypothesis, this means *As*-clauses can adjoin to VPs yielding an immediate account of a wide range of ambiguities in structures containing VP-external operators like *not*, *no longer*, *never*, *always*, and modal and tense elements. By (i), adjunction below these operators does not affect the truth conditional status of the *As*-clause itself.

However, these assumptions are not sufficient to account for the fact that negated subjects and objects can also yield non-negated interpretations of *As*-clauses (i.e., these negative quantifiers can be interpreted as indefinites 'inside' the *As*-clause). I adopt (in section 4.4) a version of Ladusaw's theory of negation, in which the negative strength of all anti-additive negative words is optionally expressed in a NegP, above CP. This means that an *As*-clause can target the non-negated IP below, producing a 'non-negated' interpretation.

Many puzzles relating directly to the syntax and semantics of *As*-parentheticals remain unsolved, and I have barely considered the extent to which their properties hold of other parenthetical expressions. My hope is that the above study shows not only that parentheticals have much to offer in the way of evidence for syntactic and semantic analyses in general, but

also that they are a rich source of analytic puzzles in their own right, and display remarkable cross-linguistic consistency and robustness.

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