Nominal Appositives in Context

Linton Wang, Eric McCready, Brian Reese
University of Texas at Austin

This paper defends two claims concerning the interpretation of nominal appositives: (1) the content of an nominal appositive and a main clause often interact with each other in interesting ways and (2) nominal appositives and appositive relative clauses exhibit important semantic differences. These claims diverge from previous proposals. We support them with various kinds of evidence regarding the interpretation of nominal appositives.

1 Introduction

Abstracting away from the specifics of implementation, most accounts of the semantic contribution of nominal appositives assume that they introduce a sentential meaning that is independent of the contribution of the main clause. We refer to this assumption as the *semantic independence assumption (SIA)* or as simply the independence assumption. For example, the interpretation of (1), from Dever (2001), is treated as two independent assertions, (2a) and (2b), which may make different discourse contributions (Potts 2005, Chierchia & McConnell-Ginet 1993) or as two assertions linked by inter-sentential anaphora as in (3) (del Gobbo 2003, Dever 2001, Sells 1985).

(1) Plato, the greatest metaphysician of antiquity, wrote the *Cratylus*.

(2) a. Plato wrote the *Cratylus*.
b. Plato was the greatest metaphysician of antiquity.
c. $< At-Issue : (2a), CI : (2b) >$
d. $< Assertion : (2a), Background : (2b) >$
e. $Conjunction < (2a), (2b) >$.

(3) Plato wrote the *Cratylus*. He was the greatest metaphysician of antiquity.

Theories that take (1) to have the interpretation in (2a) or (2b) are referred to as *full antecedent recovery* (FAR) approaches since (2b) is the result of recovering the full antecedent of the nominal appositive, *Plato*. Different versions of this approach treat the relation between (2a) and (2b) differently. Potts (2005), as shown in (2c), takes (2a) to be the main assertion, or to provide the "at issue" content of the utterance, and (2b) to be a conventional implicature (CI) of (1). Chierchia & McConnell-Ginet (1993), as shown in (2d), treat (2a) as the main assertion and (2b) as background information. No one explicitly endorses (2e), the conjunction of (2a) and (2b). Theories that assume that (1) has the interpretation shown in (3) are referred to as *anaphoric antecedent recovery* (AAR) approaches since (3) is the result of recovering the antecedent for the appositive in (1) using an anaphoric pronoun.

We introduce data in this paper that show that appositives and main clauses interact in complex ways, often affecting each other's interpretation. The independence assumption is discussed in some detail in section 2. Pros and cons for it are provided in section 3. Only nominal appositives are considered there. Section 4 incorporates appositive relative clauses into the discussion. We show that appositive relative clauses are semantically very different from nominal appositives, contrary to some claims in the literature. We refer to a sentence that contains an appositive an *appositive containing sentence* (ACS).

2 Previous Proposals

As stated above, two main approaches to appositives exist: the FAR approach and the AAR approach. Both of these approaches endorse the independence assumption; that is, they assume that the meaning of the main clause and nominal appositive are computed independently of each other.

2.1 Full Antecedent Recovery

The full antecedent recovery approach has its origin in Chierchia & McConnell-Ginet (1993) and is developed further by Potts (2005). We focus on Potts' version of this approach below.

According to Potts (2005), the main clause in an ACS contributes the sentence's *at issue* content, while the appositive constributes a so-called *conventional implicature* (CI). Potts (2005) models these two aspects of meaning using a multi-dimensional semantics; at issue content and conventional implicature represent different dimensions of sentence meaning. Adding an appositive to a sentence adds a dimension to a sentences meaning.

On Potts' account, at issue content and CI are computed according to the rules in (4).

(4) a. At-issue meanings apply to at issue meanings to produce at-issue meanings.

b. CI meanings apply to at-issue meanings to produce CI meanings.

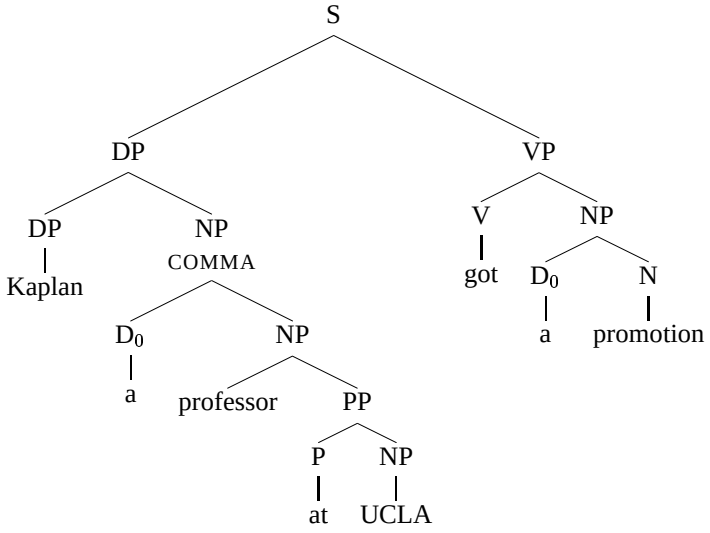
In this framework, the interpretation of any utterance is a tuple. At issue content is one element of the tuple and all expressive content introduces extra, independent, elements.

As a concrete example, consider the derivation of the meaning of (5) given the syntactic analysis in (6).

(5) Kaplan, a professor at UCLA, got a promotion.

The appositive clause *a professor at UCLA* is associated with a feature COMMA (related to comma intonation) that is interpreted expressively.

(6)

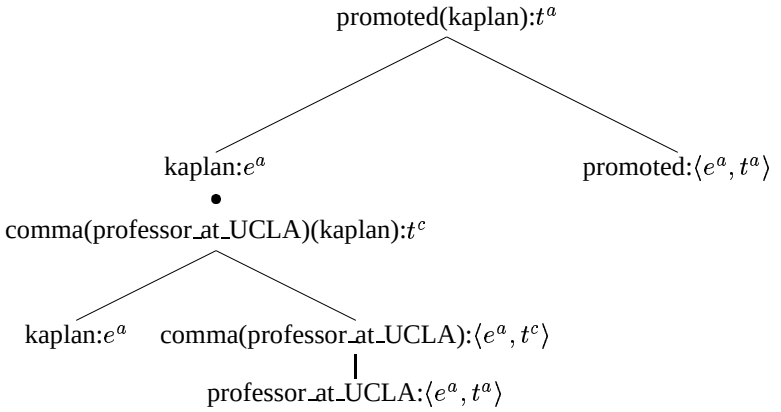


The COMMA feature is a type-shifting operator, here with the following type and meaning:

(7) COMMA = $\lambda f.\lambda x.f(x) :<< e^a, t^a >, < e^a, t^c >>$

The meaning composition tree associated with this syntactic representation is shown in (8). The indefinite *a professor at UCLA* here must be given a predicative interpretation.

(8)



Potts (2005) ensures that CI content in non-root nodes is not interpeted in the scope of other operators by using the following evaluation schema (shown in a simplified version).

(9) $[\alpha : \sigma^a \bullet \beta : \tau^c]^{M,g} = < [\alpha : \sigma^a]^{M,g}, [\beta : \tau^c]^{M,g} >$ (Potts 2003: 61)

α and β are variables over lambda terms, and σ^a and τ^c are variables over semantic types. The superscripts distinguish the types as either at-issue (superscript a) or CI (superscript c). The bullet mark $\bullet$ is used to separate independent formulae. In this way, **content**^{c} can be pulled out of lower nodes and inserted directly into a final meaning tuple. This means that appositives introduce content into the second part of the tuple, resulting in:

(10) $\langle promoted(kaplan), professor\_UCLA(kaplan) \rangle$

Summarizing, Potts' framework makes the following assumptions and predications about the interpretation of ACSs:

(11) **Assumption**

a. At-issue content (main clause content) does not import content from appositive clauses.

b. There is no special semantic relation between at-issue content and CI (appositive content), except perhaps that CI may provide background information to at-issue content.

(12) **Prediction**

a. Appositives cannot be denied with simple negations.

b. Appositives cannot be semantically embedded.

We show that the independence assumption and the predictions that it makes are empirically unsupported.

2.2 Anaphoric Antecedent Recovery

The anaphoric antecedent recovery approach has its beginnings in Sells (1985). More recent developments, which are the focus of this section, are Dever (2001) and del Gobbo (2003).

Del Gobbo (2003) defends the following claims pertaining to nominal appositives:

- Appositive relative clauses are instances of E-type anaphora (p. 98).
- Nominal appositives can be paraphrased using appositive relative clauses (p. 101).

The first point describes how appositive relative clauses are to be interpreted and forms the basis for the independence assumption. The second point claims that nominal appositives and appositive relative clauses are equivalent. Together, they tell one how to interpret nominal appositives.

According to del Gobbo, then, the meaning of (5), repeated as (13a), can be recovered from the meaning of (13b), which by exploiting discourse anaphora can be paraphrased as (13c).

(13) a. Kaplan, a professor at UCLA, got a promotion.
b. Kaplan, who is a professor at UCLA, got a promotion.
c. Kaplan got a promotion. He is a professor at UCLA,

Abstracting away from the formal details, both Potts (2005) and del Gobbo (2003) share the semantic independence assumption (11) and the predictions in (12). The approaches diverge in that it is not completely clear whether del Gobbo (2003) predicts (12b) or not since she does not consider such cases. Furthermore, the assumption that nominal appositives are essentially equivalent to appositive relative clauses is incorrect, as shown below.

3 Problems with the Independence Assumption

In this section, we argue that the independence assumption is not empirically supported . Specifically, main clause content and appositive content in an ACS interact in complicated ways. As far as we can see, existing theories cannot handle the data we discuss here.

3.1 Independence of Truth Evaluation

One argument in favor of the SIA is the observation that the truth conditions of main clauses are independent of those of appositive clauses. The approaches sketched in (2c), (2d) or (3) provide different criteria for evaluating the truth of (1). Consider the following truth value distribution for $< (2a), (2b) >$.

(14) $< (2a), (2b) >$

a. $< 1, 1 >$

b. $< 1, 0 >$

c. $< 0, 1 >$

d. $< 0, 0 >$

The FAR approach proposed in Potts (2005) takes the truth value of an ACS such as (1) to be multi-dimensional. The truth value of (1) is represented two dimensionally by the possibilities shown in (14). The first column represents the truth value of the main clause and the second column represents the truth value of the appositive clause. The multi-dimensional semantic framework rejects the possibility of collapsing the two dimensions into a single dimension, true or false. The truth value of the appositive clause, treated as CI or background, does not affect the truth value of the main clause.

One argument in favor of this separation of content comes from *objection tests*, or *denial tests*, as proposed in Karttunen & Peters (1979) (and see also Potts 2005 for more on this issue). For example, one may object to (1) with either (15a) or (15b).

(15) a. No, that is not true.

b. Well, yes, but, ...

Potts (2005) argues that the denial in (15a) applied to (1) negates only (2a), the main clause content, leaving (2b) untouched. The objection to (1) in (15b), on the other hand, negates only (2b), leaving (2a) untouched. Since denials of (1) can not apply to both (2a) and (2b) simultaneously, the truth value of (1) must exist on separate planes, so to speak.

The intuitions of the multi-dimensional approach, however, are not as clear cut as it might at first glance appear. Examining each of the truth value pairs in (14), there appear to be cases in which (1) has a one-dimensional truth value. According to Dever (2001), if (2a) and (2b) are both true, then (1) is true. If (2a) and (2b) are both false, then (1) is false. If (2a) is true but (2b) false, then (1) appears to be true. However, if (2a) is false and (2b) true, then (1) is neither clearly true nor false. According to Dever (2001), these intuitions exclude (2e) as a possible

interpretation of (1). The unification of truth values in ACSs raises a problem with the multi-dimensional truth value of Potts (2005).

The truth value intuitions just cited fit well with the AAR approach in (3). The AAR approach believes that appositives are linked to their antecedents via an (covert) E-type pronoun. This approach in fact contains a weak version of the independence assumption. Regardless of how E-type anaphora is implemented, this approach not only captures the intuition about truth values, but also accounts for the objection test. The objection (15a) can be understood as an objection to the first sentence of (3) and the objection (15b) can be understood as an objection to the second sentence of (3). But, as we will see, the E-type approach runs into other problems.

In any case, the results of the denial test are not as clear cut as suggested in Potts (2005). For example, the denial in (16b) is perfectly fine as a denial of the appositive content in (16a).

(16) a. John got a good grade, an A^+, on his logic exam.

b. No, that is not true. (He got an A^- on the exam.)

Moreover, a denial can target the rhetorical connection between an appositive clause and main clause, in addition to the appositive or main clause content itself. For example, the denial in (17b) is a denial of the explanation that John has a lot of money because he is a shrewd business man rather than the appositive content alone.

(17) a. John, a shrewd business man, has a lot of money.

b. Well, yes, but (the reason why he has a lot of money is because he has a rich wife).

In sum, the FAR approach fails to capture the phenomena in (16) and (17). A better understanding of the denial test is needed. The AAR approach fares well with the data so far, but will run into problems elsewhere, as we now show.

3.2 Specificity

The FAR and AAR approaches agree on two points. They both maintain that main clause content does not impact appositive content. *The only information in main clauses used to construct the appositive content is the antecedent of the appositive clause*. Second, they maintain that appositive content does not affect the interpretation of main clause content. Deleting an appositive clause will not affect the interpretation of the main clause – a widely held view. However, both of these theses are wrong.

With regard to the second point, we note that main clause content can, in fact, be affected by the content of an appositive clause. (18a), for example, is ambiguous

between a *de dicto* and a *de re* reading. In (18b), however, the main clause is unambiguous; it has only a *de re* reading. The ambiguity of (18a) *does not persist* in (18b). (18a) and (18b) constitute a minimal pair and the difference in possible interpretations must be a result of the presence of the appositive clause.

(18) a. John wants a car. (*de re* and *de dicto*)

b. John wants a car, the red BMW. (*de re* only)

The content of the nominal appositive – in this case one of its presuppositions – determines whether and how it affects the interpretation of the main clause. If we modify the appositive, eliminating this presupposition, then both readings are again available, as in (19).

(19) John wants a car, a red BMW.

Note however that approaches which posit an E-type pronoun get this wrong, assuming, as is standard, the use of a definite determiner in the paraphrase of the pronoun: the (covert) definite has the same presuppositions as any other definite, and so these approaches predict that (19) has the same interpretation as (18b), which is wrong.

Appositive clauses can also affect the available quantifier scopings for a sentence. Consider the main clauses in (20a) and (20b), each of which, if used independently, has both an $\forall\exists$ and $\exists\forall$ reading. However, when the appositive clauses in (20a) and (20b) are considered, only one reading remains. *Every* takes wide scope. Again, the ambiguity in the main clause does not persist.

(20) a. Every man admires exactly one man, himself.

b. Every man admires exactly two women, his wife and his mother.

The reason for this presumably is that the variables introduced by the pronouns in the appositive would become unbound were the $\exists$-quantifier, and so the appositive it hosts, to take wide scope.

Next, consider (21a) and (21b). The *de dicto* reading of (21a) is infelicitous, as shown in (21b), but the definite host of the appositive in (22a) means that (22b) is always felicitous. Here, the presuppositions of the antecedent affect that interpretation of the nominal appositive.

(21) a. A wolf, a big one, might come into your house.

b. A wolf might come into your house. *It is a big one.

(22) a. The wolf, a big one, might come into your house.

b. The wolf might come into your house. It is a big one.

Although the distinction between (21a,b) and (22a,b) does not explicitly show that main clauses affect the interpretation of appositive clauses, it does show that the same appositive clause may exhibit different anaphoric relations with respect to different antecedents. We provide more direct evidence in later sections.

3.3 Background and CI

Previous approaches also differ in what they assume the discourse contribution of an appositive clause to be. For a CI theory of appositives such as Potts (2003), appositive clauses contribute a conventional implicature which provides *background* information for the interpretation of the main clause. We show in this section that this assumption is too simplistic; appositive clauses can make a range of contributions to the interpretation of a discorse.

Appositive clauses can in fact play a variety of roles in the interpretation of a discourse. The appositive clause in (23a), for example, provides *background* information for the main clause content, while the appositive clause in (23b) *elaborates* the information contrbuted by the main clause (see Asher & Lascarides 2003 for the distinction between *Background* and *Elaboration*).

(23) a. John, a famous professor, teaches at UT. (Background)
b. John wrote a great book, a science fiction novel. (Elaboration)

This kind of discourse information can subtly influence the understanding of an utterance. The appositive clause in (24), for example, not only elaborates the main clause, it also eliminates a possibility left open by the information conveyed by the main clause: that the professor is unknown or not especially prominent in any way.

(24) A professor, a famous one, is coming to give a talk. (Elaboration)

The examples in (25) show that appositives participate in even more exotic types of rhetorical relations with main clauses. (25a) and (26a) are infelicitous in "out of the blue" contexts. An addition of an appositive clause, however, saves these sentences, as shown in (25b) and (26b).

(25) a. ?John is also a good tennis player. (in null context)
b. John, a good swimmer, is also a good tennis player. (Parallel)

(26) a. ?John is not a good tennis player, however. (in null context)
b. John, a swimmer, is not a tennis player, however. (Contrast)

Also and *however* signal particular discourse relations – *Parallel* and *Contrast* respectively – as well as introducing certain presuppositions. The appositives in (25b) and (26b) satisfy the presuppositional and discourse structural requirements of the main clauses. This phenomenon challenges the assumption that main clauses in ACSs can always survive independently from appositive clauses.

3.4 The Projection Problem

One fact in support of the independence assumption is that the content of nominal appositives projects out of conditionals and intensional contexts. For example, as argued in Asher (2000), (27a) does not entail (27b) because the content of the nominal appositive in (27a) projects out of the antecedent of the conditional.

(27) a. If the party, an uninteresting social gathering, is over, then we should find some where else to get a drink.

b. If the party is over and the party is an uninteresting social gathering, then we should find some where else to get a drink.

The projection of appositive content in these contexts supports the independence assumption, if the appositive content *always* projects. This is not always the case, however. If the antecedent of the appositive is presuppositional, i.e. a proper name or definite description, the appositive content will project, otherwise, it need not do so. For example, the appositive content projects out in example (28a) but does not do so in (28b).

(28) a. If John, a famous professor, publishes a book, he will make a lot of money.

b. If a professor, a famous one (that is), publishes a book, he will make a lot of money.

Similar phenomena are encountered with respect to intensional contexts. On the *de re* readings of (29a) and (29b), the content of the appositive is interpreted outside of the intensional context, but not on the *de dicto* reading.

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

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

The nominal appositive plays a special role with respect to the *de dicto* reading of (29a) and (29b); namely, it cancels a possibility left open by the main clause, just as in (24). For example, the *de dicto* reading of the main clause in (29a) is true in a situation in which Mary wants to marry any Italian regardless of whether he is rich or poor. However, poor Italians are disallowed by the appositive in (29a).

The discourse contribution of an nominal appositive may affect its projection behavior. For example, if the appositive in (30) is understood as introducing background information, i.e. as saying that an A is a good grade, then it projects out of the conditional, but if it is interpreted as an elaboration, i.e. that John wants a good grade and the grade is an A, then it does not project out.

(30) If John gets a good grade, an A, in his logic class, then he will be happy.

Appositive content also projects out if the appositive is interpreted generically, as in (31).

(31) A wolf, a ferocious animal, might come into your house.

One challenge associated with the generic reading of nominal appositives is that it co-exists only with the *de dicto* reading (and not the *de re* reading) of the main clause. If the appositive content in (31) is understood as providing background to the main clause content, then the appositive content projects out and receives a *de re* reading. If the appositive content in (31) is understood as providing further elaboration of the main clause content, then the appositive content does not project out and receives a *de-dicto* reading. So the NP antecedent to the appositive must play dual semantic roles. It must be interpreted generically in order to support the generic reading of the appositive, but, at the same time, it must be interpreted as a nonspecific indefinite within the main clause. Potts (2005: 102) makes a similar point.

Finally, the generic reading may be blocked by informative particles or certain adverbs. For example, a generic reading of the nominal appositive does not seem to be available in (32a). The generic reading is also unavailable in (32b) where the appositive has a specific antecedent.

(32) a. A certain wolf, a ferocious animal, might come into your house.

b. A wolf, a really ferocious animal, might come into your house.

In summary, accounting for the projection of appositive content requires consideration of following factors: the presuppositions of both the appositive and its antecedent, whether the antecedent receives a specific or non-specific interpretation, the discourse contribution of the appositive, and whether the appositive has a generic interpretation. A simple minded viewpoint on projection cannot account for the examples above.

How might we go about accounting for the facts? We have a programmatic suggestion about how to do so. The thing to note is that the behavior of the appositive with respect to projection depends on anaphoric binding (in a broad sense including presupposition, cf. Geurts 1999). They must be interpreted so that their presuppositions are bound—so if the appositive includes, for instance, a variable that is bound by a (nonprojecting) host indefinite, it cannot project, but if the main clause contains a presupposition that would remain unbound if the appositive did not project, it must do so. This idea can be made precise using anaphoric notions of presupposition (e.g. Geurts 1999) and a notion of maximization of variable binding (cf. the *Maximise Discourse Coherence* of Asher & Lascarides 2003). We will not be able to make this idea more precise here for space reasons, but leave it as an avenue for future work.

4 Appositive Relative Clauses

When appositive relative clauses are brought into the discussion, the complexity of the phenomena introduced in section 3 increases. In this section we show that appositive relative clauses differ substantially from nominal appositives, contra the claims made in del Gobbo (2003) and Doron (1994) and desribed in section 2.2.

First, appositive relative clauses affect the interpretation of main clauses differently than nominal appositives. Only a *de re* reading is available in (33a) but both *de re* and *de dicto* readings are available in (33b).

(33) a. John wants a car, which is red. (*de-re* only)

b. John wants a car, a red one. (*de-re* and *de-dicto*)

Second, appositive relative clauses make more varied contributions to discourse than nominal appositives: *Explanation* (34b) in addition to *Background* and *Elaboration*. An nominal appositive, for example, cannot be understood as providing an explanation of the main clause, cf. (35b).

(34) a. Kim entered the room, which was pitch dark. (Background)

b. Kim turned on the light of the room, which was pitch dark. (Explanation)

(35) a. Kim entered the room, a pitch dark one. (Background)

b. Kim turned on the light of the room, a pitch dark one. (Explanation: ?, Background: ok)

Appositive relative clauses can easily trigger the projection of appositive content in (36b). This may be caused by the definiteness associated with the relative pronoun.

(36) a. John believes that a professor, a quite famous one, published a book. (*de-re* and *de-dicto*)

b. John believes that a professor, who is quite famous, published a book. (*de-re* only)

Finally, appositive relative clauses seem to block generic interpretations in examples like (37).

(37) A wolf, which is a ferocious animal, might come into your house.

In sum, relative appositive clauses behave very differently from nominal appositives, contradicting the claim in the literature that they are identical, and ruling out any analysis that treats the two as mutually paraphrasable (such as that of del Gobbo 2003).

5 Concluding Remarks

This short paper shows that appositive content and main clause content can interact with each other in the process of interpretation, and appositive relative clauses and nominal appositives interact with main clauses in very different ways. Some further work needs to be done in order to account for this interaction. First, the syntax-semantics interface of appositives needs to be reconsidered. Naive independent clause approaches and naive subordinate clause approaches cannot capture the complicated interaction between appositive clauses and main clauses. Second, the semantic relationship between appositive content and main clause content is more complicated than simply background information or a conventional implicature in Potts' sense. A more complicated account of discourse relations is required to account for the interaction of appositive and main clause content.

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