

Lecture 5: Genitives, Type-Shifting, and Argument-Modifier Debates¹

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1. Background: Possessives and the argument-modifier distinction in NPs.

The argument-modifier distinction is less clear in NPs than in VPs; nouns do not typically take arguments. Clearest cases of arguments in NPs: some nominalizations (Grimshaw 1990). Non-deverbal relational nouns: *sister*, *mayor*, *enemy*, *picture*, *edge*, *height*: in some sense these seem to take arguments. C.L.Baker (1978) proposed a test using English *one* anaphora: *one* substitutes for N-bar, which obligatorily includes all of a noun's arguments. By that test, (1a) *to Oslo* is a modifier, while *of Boston* in (1b) is an argument. But neither this nor any other known test has seemed conclusive, and the question of whether and in what sense "true nouns" take arguments remains controversial.

- (1) a. The train to Oslo takes longer than the one to Stockholm.
b. *The mayor of Boston has more power than the one of Baltimore.

Possessive constructions like *John's teacher*, *John's team*, *John's cat*, *friend of John's* offer an interesting test-bed for the argument-modifier distinction in NPs, both in English and cross-linguistically. Many, perhaps all, possessives seem to have some properties of arguments and some of modifiers, but some seem more argument-like and some more modifier-like. Recent proposals by Jensen and Vikner (1994, ms.1998) and Partee and Borschev (1998) analyze *all* possessives as argument-like, a conclusion we are no longer sure of. It is not easy to settle the question of whether there is a substantive difference between these two "roles" of possessives, and it may well be the case that all or many possessives play

¹ Much of this work was presented in Partee and Borschev (1999.) Our continuing indebtedness to ongoing discussions with Per Anker Jensen and Carl Vikner is evident throughout. We are also greatly indebted to other colleagues in Amherst and Moscow and elsewhere; full acknowledgements will appear in the full paper.

both roles at once.

Question: are all, some, or no possessives arguments of nouns, and if so, which ones (and how can we tell?), and arguments of what kind, and at what 'level' of analysis? Are some possessives able to get argument-like interpretations without actually being arguments in any structural sense?

1.1. Possessives/genitives and related constructions.

Terminology surrounding "possessives" and "genitives" is confusing, since the correspondences among morphological forms, syntactic positions, grammatical relations, and semantic interpretations are complex and debated, and vary considerably across languages.

For clarification, let us distinguish at least the following: (E = English, R = Russian)

- a. Possessive pronouns: E. *my, his*; R. *moj* 'my', *ego* 'his'; E. predicative forms *mine, his* and postnominal forms *of mine, of his*.
 - b. English "Saxon genitives": *John's*, and the postnominal Saxon genitive *of John's*.
 - c. English PP with *of* + Acc.
 - d. Russian genitive NP (postnominal): R. *Mendeleeva* 'of Mendeleev', R. *tigra* 'of a/the tiger'
 - e. Russian prenominal possessive: R. *Mašin dom* 'Masha's house'.
- (f., g.: in the background: adjectival constructions like *American invasion*, R. *tigrinye sledy* 'tiger tracks', and noun-noun compounds like E. *tiger tracks*.)

Some basic data [repeated from Lecture 3]

- (1) (a) John's team
(b) A team of John's
(c) That team is John's.
- (2) (a) John's brother
(b) A brother of John's
(c) #That brother is John's
- (3) (a) John's favorite movie
(b) A favorite movie of John's
(c) #That favorite movie is John's
- (4) (a) John's portrait [any relation including that in (c)]
(b) A portrait of John's [any relation except that in (c)]
(c) A portrait of John "object"-like argument
(d) That portrait is John's [seems to exclude the (c) reading]

Informally, one can give a unified interpretation of the possessive phrase *John's* that applies to all of these cases: the DP in the possessive phrase always expresses one argument of a relation, and the possessive phrase as a whole forms a restrictive modifier of the head noun. But it seems that the relation can come from any of three sources:

- (i) the context, as in (2) ("plays for", "owns", "is a fan of", etc.); this happens when the noun is a plain 1-place predicate.
- (ii) an inherently relational noun like *brother*, as in (3).
- (iii) an inherently relational adjective like *favorite*, as in (4).

Call case (i) the "free R" ("free relation") reading, cases (ii) and (iii) "inherent R" readings.

Then the semantic question is: do the possessive constructions [N(P) + of John's] and [John's + N(P)] have a uniform compositional interpretation?

There are in principle three possibilities.

- (i): Assimilate all cases to the "free R" reading. That option was proposed by Hellan (1980). Partee (1983/97) argued against it on the basis of the contrast among the (c) examples in (1-3).
- (ii) Posit two different possessive constructions, treating "inherent R" possessives as type-raised arguments and "free R" possessives as (intersective) modifiers (Partee (1983/97).
- (iii) Assimilate all cases to the "inherent R" reading. This option was introduced by Jensen and Vikner (1994), and further explored in Partee and Borschev (1998), Jensen and Vikner (ms. 1999).

1.2. Related issues in Russian.

Russian has at least two different constructions that overlap with the English constructions illustrated above. (i) A head noun may be followed by a genitive NP (or DP), as in (5) below; as the glosses illustrate, these may correspond either to the English construction 'N of NP's' or to 'N of NP'. (ii) There is a prenominal construction with quasi-adjectival morphology, limited to names and certain name-like nouns (generally nouns which may be used in the vocative; there are also morphological limitations on the nouns that can be used in this construction), studied by Babyonyshev (1997), illustrated in (6) below; Babyonyshev (1997) convincingly shows that the semantics of these constructions is like that of an English prenominal genitive, not like that of a denominal adjective: (6a) means 'the neighbor's story about her problems', with a specific neighbor necessarily understood, while (6b) means something like 'a story about one's problems, typical of neighbors'. Both languages also have possessive pronouns, which we are not separately addressing, although they deserve separate attention for a number of reasons (partly because in Russian possessive pronouns can occur predicatively and genitive NPs cannot; also see Paducheva 1984).

| | | |
|-----|--|---|
| (5) | <i>ljubitel' košek</i> <i>rost čeloveka</i> <i>nožka stola</i> <i>stakan moloka</i> <i>portret Peti</i> <i>sled tigra</i> <i>sobaka dočeri</i> <i>nebo Andreja Bolkonskogo</i> <i>portret Peti</i> <i>priezd studenta</i> <i>ocenka Dobroljubova</i> | 'lover of cats, cat-lover' 'height of the/a man' 'leg of the table, table leg' 'glass of milk' 'picture of Peter' 'track of the/a tiger' 'the daughter's dog' 'Andrej Bolkonsky's sky' 'Petja's portrait (of/by/owned by/...)' 'arrival of the student' 'evaluation of Dobroljubov' (subj or obj) |
|-----|--|---|

| | | | | |
|--------|--|---------------------------|---|--|
| (6) a. | <i>sosedkin_i</i> neighbor(f)-poss-m.sg | <i>rasskaz o</i> story | <i>svoix_i</i> self _{POSS} | <i>problemax</i> problems |
| | | | | '[my] neighbor's story about her problems' |
| b. | <i>?sosedskij_i</i> neighbor _{ADJ} -m.sg | <i>rasskaz o</i> story | <i>svoix_{*i}</i> self _{POSS} | <i>problemax</i> problems |
| | | | | 'a story about one's problems, typical of neighbors' |

When we consider semantically related constructions in both languages, we are led to also consider denominal adjectives (*the American invasion*, *tigrinye sledi* 'tiger(s') tracks'), English noun-noun compounds, and possibly more. The fact that there is not a one-one correspondence between the Russian constructions and the English ones makes it clear that the semantics of possessives/genitives is not simply universal; the existence of language-

particular restrictions together with the great versatility and range of possible meanings of the genitive construction(s) pose a considerable challenge.

1.3. What about the head nouns themselves?

Part of the issue of modifier vs. argument in genitive constructions is an issue of the semantics of the head nouns to which the genitives are modifiers or arguments.

Terminology: ‘plain noun’ or ‘sortal noun’ (CN, CNP for ‘common noun (phrase)’)
 ‘relational noun’ (TCN, TCNP for ‘transitive common noun (phrase)’)

NP: full noun phrase, including any determiners; (now usually called DP.)

We will assume that plain nouns are of type $\langle e, t \rangle$: one-place predicates. Their single ‘argument’ is their ‘referential role’ (underlined); they do not ‘take arguments’.

We assume that relational nouns are of type $\langle e, \langle e, t \rangle \rangle$, with an argument place as well as a ‘referential role’.

Taking *team* and *brother* as examples of CN and TCN respectively, their semantics may be schematized as in (7a-b). In section 1.2 we discuss Jensen and Vikner’s (1994) proposal that plain nouns may be shifted to relational senses, as schematized in (7c), and the issue of the sources of particular values for the relation *R*.

- (7) a. **team** $_{\langle e, t \rangle}$, or equivalently $\lambda x[\mathbf{team}(x)]$
 b. **brother** $_{\langle e, \langle e, t \rangle \rangle}$, or equivalently $\lambda y \lambda x[\mathbf{brother}(y)(x)]$
 c. **team** $_{\langle e, \langle e, t \rangle \rangle}$: $\lambda y \lambda x[\mathbf{team}(x) \ \& \ R(y)(x)]$

2. Two theories of possessives.

2.1. Partee 1983/1997: Non-uniform possessive, type multiplicity. (Partly repeated from Lecture 3)

The analysis of Partee (1983/1997) posits an ambiguity in the construction, with the head noun (TCN) supplying the relation if it is relational, and with the construction supplying a “free relation variable” if the noun is not relational (CN).

- (8) **Predicative genitive:** $\mathbf{TR}(John's_{v/e}) = \lambda x[R_i(\mathbf{John})(x)] (= R_i(\mathbf{John}))$
- (9) **Postnominal genitive:** (i) free *R*: $\lambda P \lambda x[P(x) \ \& \ R_i(\mathbf{John})(x)]$
 (ii) inherent *R*: $\lambda R[\lambda x[R(\mathbf{John})(x)]]$
- (10) **Prenominal genitive:** basically function composition of $\mathbf{TR}(the)$ and postnominal genitive, free or inherent.
 (i) free *R*: $\mathbf{TR}([John's]_{DET}) = \lambda P[\iota z[P(z) \ \& \ R_i(\mathbf{John})(z)]]$
 (ii) inherent *R*: $\mathbf{TR}([John's]_{DET}) = \lambda R[\iota z[R(\mathbf{John})(z)]]$

Note: For the “free *R*” case, the predicate $\langle e, t \rangle$ use is basic, the other two derived by natural shifting operations. For the “inherent” *R* case, the postnominal genitive is basic (but see Section 3), and is itself analyzable as the result of type-lifting an argument to make it into a “detransitivizing modifier”.

So it seems that perhaps “free *R*” genitives are basically *modifiers*, while “inherent *R*” genitives are basically *arguments*. The biggest arguments against unifying the two, to which

we will return in section 3, concern predicate genitives and the differences in behavior between the most clearly predicative genitives and the most clearly argumental ones.

But initially let us ignore predicate genitives and concentrate on the possibility of unifying the “free *R*” and “inherent *R*” readings in the postnominal and prenominal positions.

2.2. Jensen and Vikner (1994): Uniform possessive, type coercion of CN to TCN.

Jensen and Vikner (1994) present an alternative proposal: the possessive must always combine with a relational common noun (phrase). If a possessive occurs with a plain noun, the plain noun *shifts* its meaning to become relational. The possessive construction *coerces* the shift.

Their analysis corresponds to the “inherent *R*” case of Partee (1983/1997).

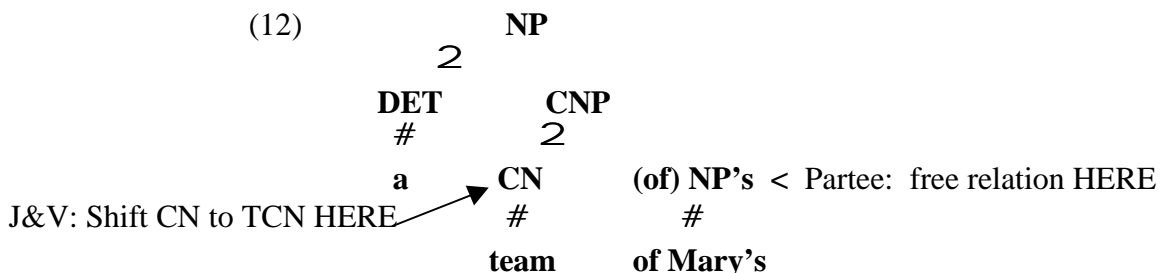
(11) *teacher of John’s*: $\lambda x[\text{teacher}(\text{John})(x)]$

Coercion: a plain CN like *chair* or *team* is coerced to a TCN interpretation. Jensen and Vikner follow Pustejovsky (1993) in appealing to the *qualia structure* of the lexical entry (details omitted here) to guide the coercion as in the shifted readings for *chair*, *leg*, *poem* below; Partee and Borschev (1998) have suggested extensions of their work to allow for the context to play a role in the general case, as in the “free *R*” shift for *team* below for Jensen and Vikner’s “pragmatic” reading. Dölling (p.c.) would advocate reducing *all* such shifts to the “free *R*” case in the semantics, leaving the influence of lexical structure on the choice of value of *R* to a later level of conceptual structure.

CN *chair*: $\lambda x[\text{chair}(x)]$
 TCN *chair*: $\lambda y \lambda x[\text{chair}(x) \ \& \ \text{sits-in}(x)(y)]$ [shift based on ‘telic role’ of *chair*]
 TCN *leg*: $\lambda y \lambda x[\text{leg}(x) \ \& \ \text{part-of}(y)(x)]$ [shift based on ‘constitutive role’ of *leg*]
 TCN *poem*: $\lambda y \lambda x[\text{poem}(x) \ \& \ \text{created}(x)(y)]$ [shift based on ‘agentive role’ of *poem*]
 TCN *team*: $\lambda y \lambda x[\text{team}(x) \ \& \ R(x)(y)]$ [“pragmatically based” shift – “free *R*”]

2.3. What’s the difference? What evidence could decide?

The main difference between the two approaches is in “**where**” a “free relation variable” is added in a case where context is driving a pragmatically based coercion. Let’s suppose that *team of Mary’s* is such a case.



Jensen and Vikner:

of Mary’s: $\lambda R[\lambda x[R(\text{Mary})(x)]]$
 (shifted) *team*: $\lambda y[\lambda x[\text{team}(x) \ \& \ R_i(y)(x)]]$
team of Mary’s: $\lambda x[\text{team}(x) \ \& \ R_i(\text{Mary})(x)]]$

Partee(1983):

of Mary’s: $\lambda P \lambda x[P(x) \ \& \ R_i(\text{Mary})(x)]]$

(non-shifted) *team*: **team**
team of Mary's: $\lambda x[\text{team}(x) \ \& \ R_i(\text{Mary})(x)]$

The final result is the same; but for J&V the free relation variable comes in as part of the meaning of the shifted noun, while for Partee (1983/97) it comes in as part of the meaning of the possessive construction itself. Can we find cases where this difference leads to different results? Yes: see Section 2.4.

2.4. In favor of (modified) Jensen and Vikner approach: Mary's former mansion.

Assumptions:

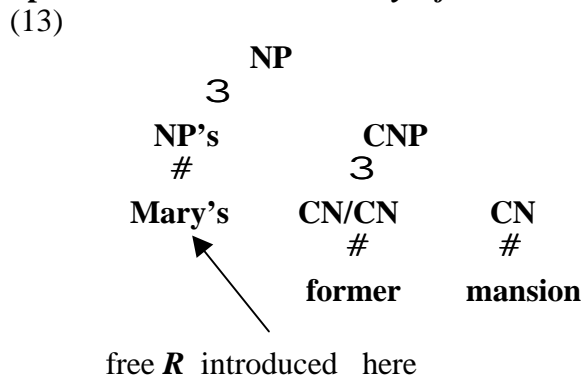
- i) *mansion* is lexically a 1-place noun.
- ii) *former* is an endocentric modifier, lexically a CN/CN, shiftable to a TCN/TCN.
 - a) *former* as CN/CN: *former monastery*, *former dancer*.
 - b) *former* as TCN/TCN: *former owner*, *former friend*.
- iii) The “free relation” variable in this case has as one of its most salient values something like “owns” or “lives in”.
- iv) *Mary's former mansion* has two readings:
 - (A) a former mansion (perhaps now just a ruin) that is (now) Mary's. I.e., now Mary's, formerly a mansion.
 - (B) what was formerly Mary's mansion; it may still be a mansion, but it's no longer Mary's.

Argument:

On the Partee (1983/97) account, there is no motivation for any type-shifting to occur, and the “free relation” “owns” will be introduced with the possessive *Mary's*, after *former* has combined with *mansion*.

This means that the free relation (“owns”) in the interpretation of the possessive *Mary's* will never be under the scope of *former*. As a result, Partee (1983/97) can derive reading (A) above, but not reading (B). See tree (13)

Compositional structure of *Mary's former mansion* on the account of Partee (1983/97):



But Jensen and Vikner's account, with coercion of CN to TCN, *does* provide derivations for both readings, and is therefore better.

Jensen and Vikner's account.

For Jensen and Vikner, *Mary's* coerces *former mansion* to a relational TCN. Given our assumptions, there are two ways that *former mansion* could shift to a TCN.

1) Initially leave *mansion* as a CN, treat *former* as CN/CN, combine them to form a CN, as on Partee account; then shift that CN to a TCN, bringing in the free variable at that stage to get the shifted meaning of *former mansion* shown below:

$$\lambda y[\lambda x[\text{former}(\text{mansion})(x) \ \& \ R(y)(x)]] \ [R: \text{“is owned by”}]$$

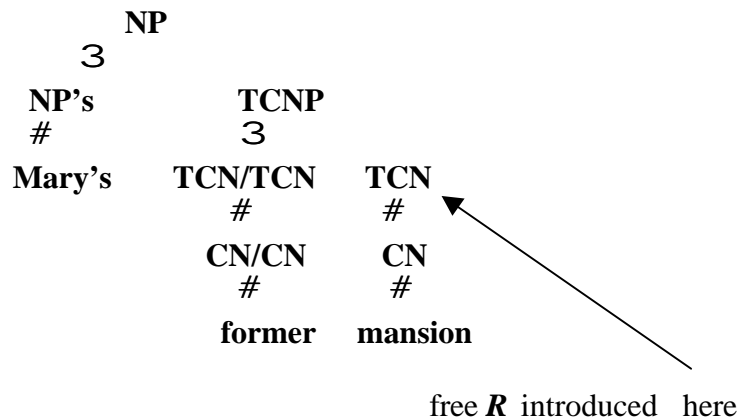
This corresponds to reading (A) above, with the free *R* introduced at the point where the CNP shifts to become a TCNP.

2) Shift *mansion* to a TCN, and *former* to a TCN/TCN, combine them to form a TCN:

$$\lambda y[\lambda x[\text{former}(\text{mansion-of})(x)(y)]] \ , \ \text{where } \mathbf{mansion-of} \ \text{is an abbreviation for} \\ \lambda y[\lambda x[\text{mansion}(x) \ \& \ R(y)(x)]]$$

This corresponds to reading (B) above.

(14)



2.5. Coercion analysis: effects on analysis of other adjectives and type-shifting.

First we review some observations about *new* from Partee (1983/1997); then we will look at an alternative view of them suggested by the coercion analysis.

The analysis of such inherently relational adjectives as *favorite* suggests taking a second look at traditionally CN/CN adjectives like *new*. We can distinguish four separate (but related) types for *new*.²

² Note on categorial grammar categories and their correspondence to types:

t/e, also CN: <e,t>

CN/CN : <<e,t>,<e,t>>

TCN: <e,<e,t>>

TCN/TCN: <<e,<e,t>>,<e,<e,t>>>

TCN/CN : <<e,t>,<e,<e,t>>>

- (15)(a) [new_1]_{t/e} : "hasn't existed long" (*a new movie*)
- (b) [new_2]_{CN/CN}: "hasn't been a CN long" (*a new movie star*)
- (c) [new_3]_{TCN/TCN}: "hasn't been TCN-of long" (*my new friend*)
- (d) [new_4]_{TCN/CN}: "hasn't been (free) R_i-of long" (*John's new car is an old car.*)

The TCN/CN version, new_4 , is definable from the TCN/TCN version and a free R as shown in (15e):

$$(15) (e) \quad new_4' = \lambda P[\lambda y[\lambda x[P(x) \ \& \ new_3'(R)(y)(x)]]]$$

The coercion idea of Jensen and Vikner suggests the possibility of eliminating the TCN/CN version of *new* altogether and accounting for it via coercion of the noun instead; this would be desirable insofar as CN/CN and TCN/TCN are both natural types (endocentric modifiers), and TCN/CN a marked type which should be used, if at all, only for lexically basic meanings like the meaning of *favorite*.

In the example of (14d), then, the genitive would force the whole CN *new car* to become TCN, and the adjective and noun would then most naturally be construed as TCN/TCN and TCN respectively.

We can then suggest some natural generalizations about adjective meanings and adjective meaning-shifts.

(16)(a) **Basic types** for adjectives: t/e ($e \rightarrow t$) and CN/CN ($((e \rightarrow t) \rightarrow (e \rightarrow t))$).

(b) **Natural shifts:**

(i) from t/e: by conjunction only.

$$t/e \text{ to CN/CN: } \lambda P \lambda x [P(x) \ \& \ ADJ_1(x)]$$

$$t/e \text{ to TCN/TCN: } \lambda R [\lambda y [\lambda x [R(y)(x) \ \& \ ADJ_1'(x)]]]$$

(ii) from CN/CN

$$\text{to t/e: } ADJ_2(x) = ADJ_1(\text{entity}')(x)$$

$$\text{to TCN/TCN: } ADJ_3(R)(y)(x) = ADJ_1'(R(y))(x)$$

Some more general hypotheses and issues concerning type-shifting principles include the following:

(17) **Type-shifting principles and hypotheses.**

(a) The functor category normally coerces a shift in its argument(s) rather than the reverse. (This is just a tentative hypothesis at this point. It may be just one “default” factor competing with others such as the dominance of the marked, the dominance of closed-class over open-class items, and the dominance of grammatical constructions over lexical meanings.)

(b) Bittner and Hale’s constraint. Bittner and Hale (1995) propose the following constraint, which is consistent with all analyses that we know of and which we endorse:

Semantic type-shifting operations are required to be *type-range preserving* in the sense that they cannot create any new combinations of a syntactic category with a

semantic type. That is, a type-shifting operator of type $\langle a, b \rangle$ can apply to a constituent of type a and syntactic category \hat{e} , only if there are constituents of category \hat{e} whose *basic meaning* is of type b . (Bittner and Hale 1995, p.102)

(c) A functor category can influence the content as well as the type of its arguments; we have not illustrated this here, but it is discussed in connection with differences in effects of *favorite* and the genitive in Partee and Borschev (1998) and in Jensen and Vikner (ms. 1999).

As an illustration of the principle suggested in (17a), we consider the differences between the demands of the simple determiner a , which requires a plain one-place CN-type argument³, and the genitive, which forces a relational reading.

- (18) (a) a new mother
(b) Mary's new mother

The indefinite article in (18a) forces an interpretation of *new mother* as a plain CN, giving the reading “person who has not been a mother for long”, i.e. a woman who has recently given birth to her first child. The genitive *Mary's* in (18b), on the other hand, forces a relational interpretation of *new mother*, which results in the pragmatically unusual reading “person who has not been in the *mother-of* relation to Mary for very long”. A suitable context for (18b) could be one in which Mary was an orphan who has recently been adopted. In both cases, the determiner strongly selects for the corresponding type of common noun phrases, coercing a shift of the common noun phrase interpretation if necessary.

3. Different kinds of genitives/possessives: why Jensen and Vikner may be right for Russian genitives but not for all English genitives.

In spite of the theoretical appeal of the “one genitive” approach and its ability to solve the problem of *Mary's former mansion*, we are still not convinced that it is correct for English; interestingly, the arguments against a uniform analysis for English genitives do not apply to Russian genitives; Russian seems to show a clearer split between a genitive construction which is uniformly argumental and a prenominal possessive which is more modifier-like.

To preview the distinctions we argue for here:

1. The English *of* + NP_{ACC} construction (*portrait of John*) is strictly argumental.
2. The English Saxon genitive (*John's*) can be used as a predicate, type $\langle e, t \rangle$.
3. The English *of* + NP's construction (*portrait of John's*) is either uniformly non-argumental or ambiguously argumental/non-argumental (not sure yet). But in particular, it is not always argumental.
4. The English prenominal NP's neutralizes the distinction between postnominal *of* + NP_{ACC} and *of* + NP's. So it can be either argumental or non-argumental. [It's conceivable that 'structurally' it is never argumental, but we won't try to argue that.]
5. The Russian genitive (*Maši*), always postnominal, is always an argument. It can never be used as a predicate. (But it can be used with 'plain nouns' to express all kinds of relations including possession, as predicted by Jensen and Vikner's coercion analysis.)

³ An exception may be the behavior of weak determiners occurring in the complement of *have*, as discussed in Landman and Partee (1984) and Jensen and Vikner (1996).

6. The Russian prenominal possessive (*Mašin, -a*) can be used as a predicate, has certain limitations on its use as an argument, and is either sometimes or never structurally an argument, although it can certainly fill argument-like roles.

The puzzle that emerges is that there seem to be argumental genitive constructions and modifier ‘possessive’ constructions that have a very great overlap in what they can express; if this is correct, it means that we cannot use ‘intuitions’ of argumenthood as a good guide to whether something is ‘really’ an argument at a given level of structure. Fleshing out more specific proposals about the relevant structures is necessarily a theory-dependent matter and we do not undertake it here. There are many different proposals in the literature for different argument and non-argument positions/sources for genitives and other ‘possessives’ in English, Russian, and other languages.

3.1. Predicate genitives/possessives

One of our main worries about the uniform Jensen and Vikner analysis concerns predicate genitives, and our earlier observation that predicate genitives seem to favor “free *R*” or “possession” interpretations, together with the fact that predicate genitives are not in a structural argument position unless one posits an empty head noun accompanying all predicate genitives.

Against that background, let us return to the matter of predicate possessives. Why might they be a problem for the uniform J&V approach?

- (i) Because if some possessives can occur as basic $\langle e, t \rangle$ predicates, that would suggest that when those same possessives occur inside the DP, they are basically modifiers, and not arguments, returning us to the distinction posited in the earlier Partee (1983/1997) approach.
- (ii) And if some possessives can occur as predicates and some can occur only inside a DP, that further supports the idea of a split between argumental possessives and modifier possessives.

But of course the data are never as simple and clear-cut as we would like. Two kinds of problems:

- (iii) There may be independent reasons (syntactic, morphological) why some kinds of possessives cannot occur as predicates (e.g. Russian genitives cannot.)
- (iv) And some predicate possessives may be elliptical full DPs; it is not always easy to tell. We return to this below.

In the following sections, we look at evidence about predicate possessives in English, Russian, German, and Polish, evidence which supports the idea of two kinds of possessives, modifiers and arguments. But the evidence is not 100% conclusive, and if we do conclude that there is a distinction to be made between argumental and modifier possessives, we are left with a puzzle concerning the large proportion of cases which could seemingly be analyzed either way: are they all “ambiguous”? Or is this just a benign instance of the fluidity of the argument-modifier shifting possibilities discussed by Dowty (1997)?

3.1.1. Predicate possessives in English.

It seems worthwhile to take a second look at predicate possessives. The conclusions reached in Stockwell, Schachter and Partee (1973) and maintained in Partee (1983/1997) and in Partee and Borschev (1998), namely that predicate possessives allow only a “free *R*” reading,

were probably based on too small a sample of data and not enough careful examination of possibilities. So while (1a,b) are indeed bad, that may be because the demonstrative determiner in their NP *subjects* force the head noun to shift to a non-relational reading, which for some reason (unknown) may then make the original relational reading unavailable for the predicate possessive to “incorporate” (either via a free-R analysis or via positing a “silent” TCN in the predicate.) And (1c) (example from Ash Asudeh, p.c.) seems to be able to get a relational reading all right; is this because *teacher* is lexically supplied with equally salient and closely related relational and non-relational readings?

- (9) (a) *That father is John’s.
(b) *That favorite movie is John’s.
(c) That teacher is John’s.

More suggestions that the existence of both a relational and a non-relational meaning helps make (9c) better than (9a,b) comes from (9d,e) (Carl Vikner, p.c.)

- (d) That child is John’s.
(e) *? That girl is John’s.

Are predicate possessives elliptical full NPs?

There are data that strongly suggest that predicate possessives may sometimes be “elliptical” NPs or “Determiner-only” NPs. But we believe that not all predicate possessives are elliptical.

We do not have conclusive arguments for English; there are several complicating factors, including problems of copular sentences and the types of NPs in apparent “inversion” sentences (Partee 1999). We mention some ‘suggestive’ data, and then look at other languages where the structures in question can be identified more clearly.

- I. There are some clearly NP uses of *mine*, *yours*, *John’s*, etc., that we can compare the predicative ones with:
- (a) Mine is over there. John’s is over here.
- II. “e” or “<e,t>” role, like other problematic definites in debated “inversion” constructions. (Williams 1983, Partee 1986, Heycock and Kroch 1997, Partee 1999.)
- (10) Some of the most interesting results were John’s.
(11) One of the most interesting suggestions was John’s.
(12) Another proposal we will have to consider is Sara’s.
(These seem quite e-like, with meanings like “John’s results”, “John’s suggestion”, “Sara’s proposal”.)

III. More likely “purely predicative”:

(13) The house, the barn, and the land are finally ours and ready to move into.
This one seems more “purely predicative”, with a meaning like “belongs to us”, and the fact that it can be conjoined with an adjective phrase seems to support considering it to be of type <e,t>, whether it is considered as a reduced NP or not. And the conjoined NP subject would presumably make an ellipsis analysis more complex.

(14) It’s already/ now/ finally/ almost ours.

We think modification of this kind disambiguates in favor of a purely predicative reading that has a “possession” (or control?) reading.

- (15) Anything I find on this land is mine. (Clearly no lexical N head in the subject, explicitly or implicitly.)

3.1.2. Russian.

In Russian, possessive pronouns and the normally prenominal quasi-adjectival possessive forms can occur in predicate position but genitive NPs cannot. This suggests that Russian *genitive* NPs may always be argument-like, and that the Jensen & Vikner uniform analysis with coercion of CNs to TCNs (extended to Russian in Borschev and Partee 1999a,b) is correct for the Russian *genitive* construction. It also suggests that the Russian *prenominal* possessive forms are at least sometimes modifier-like, and the same for the possessive pronouns. (Evidence of ambiguity of the roles of the possessive pronouns is in Section 3.1.4.)

The Russian prenominal possessive construction studied by Babyonyshev (1997) is illustrated in (18) and the genitive construction in (19), with non-relational *stul* ‘chair’ in the (a) examples and relational *portret* ‘portrait’ in the (b) examples.

- (18) a. Petin stul
 Petja-poss-m.sg. chair-m.sg.
 Petja’s chair
 b. Mamin portret
 Mama-poss-m.sg. portrait-m.sg.
 Mama’s portrait
(19) a. stul Peti
 chair-m.sg. Petja-gen.sg.
 Petja’s chair
 b. portret mamy
 portrait-m.sg. Mama-gen.sg.
 Mama’s portrait

In these examples, both constructions can be used in describing the same range of cases; the possible relations of Petja to the chair or of Mama to the portrait are as various as with the English prenominal genitive. But the meanings do not “feel” identical. In the possessive construction in (18), we would like to claim (as did Schoorlemmer 1995) that the possessive *Petin*, *mamin* acts as a modifier of the head noun. We believe that the prototypical interpretation of the possessive modifier is indeed ‘possession’ (of the object denoted by the head noun, by the (animate) entity denoted by the noun in the possessive form.) To maintain such a claim, it seems that ‘possession’ must be understood in a broadly extended sense to apply to a diverse range of relations. Thus in example (18b), possession may be possession proper, ‘authorship’, or the relation of ‘being portrayed’. But the possibility of expanding the sense of ‘possession’ is evidently not unlimited. Thus ‘murderer of Petja’ can be expressed in Russian by (20a) but not by (20b).

- (20) a. ubijca Peti
 murderer-m.sg. Petja-gen.sg.
 Petja’s murderer (murderer of Petja)
 b. Petin ubijca
 Petja-poss-m.sg. murderer-m.sg.
 #Petja’s murderer [ok only as e.g. a murderer Petja has hired]

In the genitive construction in (19a), we analyze *Peti* as an argument of the relation which connects it to *stul*. In the given case, the most salient relation could alternatively be seen as

some kind of possession as well; but ‘possession proper’ is not the prototypical interpretation for the genitive construction. The range of possible relations expressed with a genitive is extremely broad (cf. Borschev and Knorina 1990, Partee and Borschev 1999, Borschev and Partee 1999.)

In terms of the three alternatives discussed above for the English genitive construction, then, we believe that the first (“free-R” only, but with a special place for ‘possession’ as the prototypical relation) is correct for the Russian pronominal possessives, while something similar to the third, assimilating all cases to the “inherent R” reading, is correct for the Russian genitive construction.

3.1.3. German.

Tony Kroch (p.c.) suggested looking for languages that would give evidence from agreement behavior as to whether predicate possessives are more like simple (adjectival) predicates or more like full DPs. Sten Vikner (p.c.) observed that German is a language that gives some evidence: Predicate adjectives in German do *not* agree with subjects, but predicate possessives *do*, suggesting that they are indeed more like elliptical DPs than like plain <e,t> predicates.

- (21) Diese Bücher sind alt/*alte.
These-m.pl. books-m.pl are old / *old+pl
- (22) Diese Bücher sind meine/*?mein
These books are mine+pl / *mine

But it was further observed by Hans Kamp (p.c.) and others that actually, the non-agreeing form can sometimes be used. It is used only in “standard” German, not in colloquial German, and it has an “archaic” flavor. Most interestingly, it seems that there are semantic differences between the agreeing and the non-agreeing predicate possessive, and if this data stands up, it is extremely interesting.

- (23) a. Diese Bücher sind meine: can be any relation.
b. Diese Bücher sind mein: (archaic) “Possession” only.

Further examples: A newly naturalized citizen might say (11a), but (11b) suggests a conquerer is speaking. Any relation is possible in (12a), but (12b) suggests a custody fight.

- (24) a. Das Land ist (jetzt) meins.
The-n.sg. land-n.sg. is (now) mine-n.sg.
b. Das Land ist jetzt mein.
The-n.sg. land-n.sg. is (now) mine
- (25) a. Die Kinder sind meine.
The children are mine-pl
b. Die Kinder sind mein.
The children are mine

Of course “possession” itself can have metaphorical extensions, so the “possession” cases do not always have to be about ownership in a literal sense. But if these distinctions are correct, this is important evidence for the idea of two distinct genitives.

So we are now inclined to believe that some predicate possessives really are plain <e,t> predicates, and that those do have just a possession/control reading. And that other predicate

possessives may be in some sense elliptical NPs, and their interpretation may have various possibilities – that needs more study, but at least in some cases, it looks like they act like prenominal genitives with an implicit TCN. (But a whole NP may sometimes be of type $\langle e, t \rangle$ when it's in the predicate, so this is complicated.)

$[John's]_{\text{PRED}} : \lambda x[\text{Possess}(x)(\text{John})] \quad \text{type: } \langle e, t \rangle$
 or: $\lambda x[\text{Possessed-by}(\text{John})(x)]$

3.1.4. Polish.

After we had found some suggestive data concerning Russian possessive pronouns in predicate position (not included here) Wayles Browne (p.c.) suggested that we should get data on Polish, because in Polish NP - be - NP requires Instrumental on the predicate NP (whereas in Russian the predicate NP may or may not be Instrumental). And in Polish NP - be - Adj requires Nom. on the Adj., (whereas in Russian the predicate AP may be 1) short Adj, 2) long Nom Adj., or 3) long Instr Adj.)

The Polish data are as follows⁴.

- (28) a. Ten kraj by³ kiedys' moim.
 That-m.nom.sg country-m.nom.sg was-m.sg once my-m.instr.sg
 'That country was once mine' ['possession' or citizenship]
- b. Ten kraj by³ kiedys' moim krajem.
 That-m.nom.sg country-m.nom.sg was-m.sg once my-m.instr.sg country-m.instr.sg
 'That country was once mine' ['possession' or citizenship.]
- (29) a. Ten kraj by³ kiedys' mo'j.
 That-m.nom.sg country-m.nom.sg was-m.sg once my-m.nom.sg
 'That country was once mine' ['possession' only]
- b. *Ten kraj by³ kiedys' mo'j kraj.
 That-m.nom.sg country-m.nom.sg was-m.sg once my-m.nom.sg country-m.sg
 'That country was once my country' [ungrammatical]
- c. Ten kraj to by³ kiedys' mo'j kraj.
 That-m.nom.sg country-m.nom.sg PRT was-m.sg once my-m.nom.sg country-m.sg
 'That country was once my country' ['possession', maybe also citizenship]

The Polish data confirm the hypothesis that when a predicate possessive pronoun allows an “argumental” reading, it is the remnant of an NP, and when it doesn't, it isn't. The “possession” reading, which seems to be emerging as the clearest case of a non-argumental reading, can show up in either a remnant of an NP or as a bare $\langle e, t \rangle$ predicate.

3.1.5 What is the semantics of predicate possessives?

The clearest examples of predicative possessives seem to have meanings that relate to the notional concept of ‘possession’, not to the “free *R*” readings posited as predicative in the early work of Partee. This suggests that we should work with a different basic split:

⁴ Thanks to Ania Łubowicz and Anita Nowak for judgments. For (28a), Anita reports no preference for one reading or the other, while for (28b) she reports a preference for the ‘citizenship’ reading. Anita rejected (29b) as ungrammatical; Ania suggested that it should be corrected to (29c), which she finds possibly ambiguous. Both agreed that (29a) is unambiguously “possession” only, whereas (28a) allows either reading.

- (i) predicative readings that have a (possibly extended) meaning of “possession”, a relational notion that comes from the possessive form rather than from a noun;
- (ii) ‘argument’ readings that involve either an inherently relational noun or a plain noun coerced to a relational reading.

This is thus not a return to the early Partee 1983/97 analysis for English, but an analysis that agrees with Jensen and Vikner’s analysis and Partee and Borschev’s extensions of it except for the recognition of a separate predicative “possessive” reading.

3.2. Multiple possessives/genitives and blocking effects.

Another kind of evidence suggesting that some of these constructions are more argument-like than others comes from examples which use more than one. In English, for example, a prenominal genitive can have any relation including “internal argument” (the most “direct object-like” relation) when it is alone, but an overt occurrence of *of* + NP_{ACC}, which necessarily expresses an “internal argument”, blocks that possibility for the genitive.

- (30) (a) a portrait of John “object”-like argument
- (b) Mary’s portrait [any relation including “object”]
- (c) Mary’s portrait of John [Mary can’t be “object”]

Similarly for the two Russian constructions we have discussed: a prenominal possessive can express any relation including “object” (with the interesting exception discussed in section 3.1.2), but when there is both a prenominal possessive and a postnominal genitive, then the data are similar to the data about English *Mary’s portrait of John*.

- (31) *Mašin* *portret Peti*
 Masha-poss-m.sg. portrait Petja-gen.
 Masha’s portrait of Petja (Masha: owner or painter)

4. Tentative conclusions and remaining puzzles

4.1. Argument genitives

Argument genitives may be seen semantically as basically type e NPs (DPs) which “want to be arguments”. Depending on one’s theory, the genitive phrase may either itself be type-lifted as in Partee (1983/1997) and Jensen and Vikner so that it in turn takes a relational TCN as its argument; or one could say simply that it stays at type e but can only be properly licensed if there is a TCN that can take it as an argument.

How can an argument genitive get such a wide range of possible readings, including “possessive” (as seen in the range of readings of the Russian genitive, for instance)? By the flexibility of possible ‘coerced’ readings of the head noun, as in the work of Jensen and Vikner extended by Borschev and Partee.

Puzzle: Why is it that nouns so easily extend their (‘weak’) argument structure and verbs much less easily? (Because in some sense *all* arguments to nouns are somewhat modifier-like, serving add restrictive modification in the form of some relational property?)

4.2. Modifier possessives

Modifier possessives may be seen as basically predicates of type $\langle e, t \rangle$, which may, like adjectives, also occur in attributive position. Whether their most basic interpretation should be seen as involving a “free R” or a broad notion that can be labelled “possession” requires further study. Cross-linguistic work (e.g. Heine 1997) indicates that different languages are not all alike as to what kinds of relations can “count” as “possessive”. But the possibility that very “argument-seeming” relations could be reanalyzed as predicative ones (as well as vice versa) is already attested in for instance the wide variation in the structure and use of the analogs of English “by-phrases”, which may be subject-like or agent-like and may be licensed and interpreted in rather indirect ways in a number of languages and constructions. Further study of ‘adjectival arguments’ as in *American invasion* is also clearly relevant to this issue.

4.3. Closing remarks

The bottom line: type-shifting and lexical meaning shifts make many compositional routes available to very similar ‘net outcomes’. The line between arguments and modifiers is not intrinsically sharp in terms of ‘what is being expressed’, and can only be investigated in theory-dependent ways. Possessives/genitives are a domain of great semantic flexibility, where we have to find detailed language-particular evidence to try to sort out how lexical semantics, compositional semantics, and type-shifting possibilities are interacting in each particular construction.

References:

- Babby, Leonard H. (1973) The Deep Structure of Adjectives and Participles in Russian. *Language* 49:349-60.
- Babby, Leonard H. (1997) Nominalization in Russian. In W.Browne, E. Dornisch, N. Kondrashova, and D. Zec, eds., *Formal Approaches to Slavic Linguistics, The Cornell Meeting 1995*, Ann Arbor: Michigan Slavic Publications, 54-83.
- Babyonyshev, Maria (1997) The possessive construction in Russian: a crosslinguistic perspective. *Journal of Slavic Linguistics* 5.2, 193-230.
- Bach, Emmon (1967) *Have and be in English syntax*. *Language* 43.2, 462-485.
- Bach, Emmon (1989) *Informal Lectures on Formal Semantics*. State University of New York Press.
- Baker, C. L. (1978) *Introduction to Generative-Transformational Syntax*. Englewood Cliffs, NJ: Prentice-Hall.
- Borschev, V.B. (1996) “Estestvennyj jazyk — naivnaja matematika dlja opisaniya naivnoj kartiny mira” [“Natural language as naive mathematics”], in *Moscow Linguistic Almanac* 1, 203-225.
- Borschev, V.B. and L.V.Knorina (1990) ‘Tipy realij i ix jazykovoe vosprijatie’ (‘Types of entities and their perception in language’), in *Language of Logic and Logic of Language* Moscow. 106-134.
- Borschev, Vladimir and Barbara H. Partee (1998). Formal and lexical semantics and the genitive in negated existential sentences in Russian. In: Željko Bosković, Steven Franks and William Snyder, eds., *Formal Approaches to Slavic Linguistics 6: The Connecticut Meeting 1997*, Ann Arbor: Michigan Slavic Publications, 75-96.
- Borschev, V.B. and B. H. Partee (1999). Semantika genitivnoj konstrukcii: raznye podxody k formalizacii. (‘Semantics of genitive construction: different approaches to

- formalization.'). In Ekaterina V. Rakhilina and Yakov G. Testeleets, eds., *Tipologija i teorija jazyka: Ot opisanija k ob'jasneniju*. K 60-letiju Aleksandra Evgen'eviča Kibrika. (Typology and Linguistic Theory: from Description to Explanation. For the 60th birthday of Aleksandr E. Kibrik.) Moscow: Jazyki Russkoj Kul'tury. 159-172.
- Borschev, Vladimir and Barbara H. Partee (1999) "Semantic Types and the Russian Genitive Modifier Construction", In K. Dziwirek et al, eds., *Formal Approaches to Slavic Linguistics: The Seattle Meeting 1998*, Ann Arbor: Michigan Slavic Publications.
- Copestake, Ann and Ted Briscoe (1995) Semi-productive Polysemy and Sense Extension. *Journal of Semantics* 12: 15-67.
- Dowty, David (1993) Adjunct-to-argument reanalysis in a dynamic theory of grammar. Unpublished paper, Ohio State University.
- Dowty, David (1997) Adjunct-to-argument reanalysis in a dynamic theory of grammar: the problem of prepositions. Paper presented at the Blaubeuren Semantics CCG/adj-arg Conference, University of Tübingen, March 1997.
- Dowty, David (1999) The adjunct/argument distinction in a Dynamic Categorical Grammar. Paper presented at the Conference "Approaching the Grammar of Adjuncts", University of Oslo, September 1999.
- Freeze, Ray (1992) Existentials and other locatives. *Language* 68, 553-595.
- Heine, Bernd (1997) *Possession: Cognitive Sources, Forces, and Grammaticization*. Cambridge: Cambridge University Press.
- Jackendoff, Ray (1997) *The Architecture of the Language Faculty*. Cambridge, Mass.: MIT Press.
- Jensen, Per Anker and Carl Vikner (1994) "Lexical knowledge and the semantic analysis of Danish genitive constructions", in S.L.Hansen and H.Wegener (eds.), *Topics in Knowledge-based NLP Systems*. Samfundslitteratur, Copenhagen, 37-55.
- Jensen, Per Anker and Carl Vikner (1996) "The double nature of the verb have", in *LAMBDA 21, OMNIS Workshop 23-24 Nov. 1995*, Institut for Datalogivistik, Handelshøjskolen i København, pp. 25-37.
- Jensen, Per Anker and Carl Vikner (ms. 1999) "A semantic analysis of the English genitive. Interaction of lexical and formal semantics. Ms, Copenhagen and Kolding, Denmark.
- Knorina, L.V. (1985) Ob interpretacii genitivnyx konstrukcij. ("On the interpretation of genitive constructions") Theses of the workshop "Semiotic foundations of intellectual activity". Moscow, VINITI.
- Knorina, L.V. (1988) Klassifikacija leksiki i slovarnye definicii. ("Lexical classification and dictionary definitions") In *Nacional'naja specifika jazyka i ee otaženie v normativnom slovarje*, ed. Ju.N. Karaulov, 60-63. Moskva: Nauka.
- Knorina, L.V. (1989) Genitivnye sravnenija v poezii Pasternaka. ("Genitive similes in the poetry of Pasternak"). In *Stilistika i poetika (Stylistics and Poetics)*. Moscow.
- Knorina, L.V. (1990) "Narushenija sochetajemosti i raznovidnosti tropov v genitivnoj konstrukcii" ('Violations of cooccurrence and varieties of tropes in genitive construction'), in *Contradictions and Anomalies of Text* Moscow. 115-124.
- Knorina L.V. (1996) The range of biblical metaphors in smikhut. *Moscow Linguistic Journal* v.3 .80-94.
- Landman, Fred and Barbara H. Partee (ms.1984) "Weak NPs in HAVE sentences". Draft abstract. University of Massachusetts, Amherst.
- Lascarides and Copestake (1995). "The pragmatics of word meaning". In M. Simons and T Galloway, eds., *Proceedings from SALT V*. Ithaca: Cornell Univ. 204-221.
- Lyons, Christopher (1986) 'The syntax of English genitive constructions' *Journal of Linguistics* 22: 123-143.

- Montague, Richard (1974) *Formal Philosophy: Selected Papers of Richard Montague*, edited by Richmond Thomason, New Haven: Yale Univ. Press.
- Partee, Barbara (ms.1983) Genitives, *have*, and relational nouns. Handout for a talk, Amsterdam, June 1983.
- Partee, Barbara (1987) Noun phrase interpretation and type-shifting principles. In J. Groenendijk, D. de Jongh, and M. Stokhof, eds., *Studies in Discourse Representation Theory and the Theory of Generalized Quantifiers*, GRASS 8, Foris, Dordrecht, 115-143.
- Partee, Barbara (1983/1997) Uniformity vs. versatility: the genitive, a case study. Appendix to Theo Janssen (1997), *Compositionality*, in Johan van Benthem and Alice ter Meulen, eds., *The Handbook of Logic and Language*, Elsevier. 464-470.
- Partee, Barbara H. (1996) The Development of Formal Semantics in Linguistic Theory. In *The Handbook of Contemporary Semantic Theory*. Ed. by Shalom Lappin. Blackwell. 11-38.
- Partee, Barbara H. (1999a) Copula inversion puzzles in English and Russian”. In K. Dziwirek et al, eds., *Formal Approaches to Slavic Linguistics: The Seattle Meeting 1998*, Ann Arbor: Michigan Slavic Publications. Also to appear in *UMOP 21: Issues in Semantics and its Interface*, Kiyomi Kusumoto and Elisabeth Villalta (eds)
- Partee, Barbara H. (1999b): Weak NP’s in HAVE sentences. In a Liber Amicorum for Johan van Benthem on the occasion of his 50th Birthday, June 1999, edited by Jelle Gerbrandy, Maarten Marx, Maarten de Rijke, and Yde Venema, Amsterdam.
- Partee, Barbara H. and Vladimir Borschev (1998). Integrating lexical and formal semantics: Genitives, relational nouns, and type-shifting. In: R. Cooper and Th. Gamkrelidze, eds., *Proceedings of the Second Tbilisi Symposium on Language, Logic, and Computation*. Tbilisi: Center on Language, Logic, Speech, Tbilisi State University, 229-241.
- Partee, Barbara H. and Vladimir Borschev (1999). Genitives, relational nouns, and the argument-modifier distinction. Paper presented at the Conference “Approaching the Grammar of Adjuncts”, University of Oslo, September 1999.
- Partee, Barbara and Mats Rooth (1983) Generalized conjunction and type ambiguity. In R. Bauerle, C. Schwarze and A. von Stechow (eds.), *Meaning, Use and Interpretation of Language*, Walter de Gruyter, Berlin, 361-383.
- Pustejovsky, James (1993) “Type coercion and lexical selection” in J.Pustejovsky, ed., *Semantics and the Lexicon*, Dordrecht:Kluwer. (73-94)
- Pustejovsky, James (1995) *The Generative Lexicon*. The MIT Press.
- Schafer, Robin (1995) “The SLP/ILP distinction in ‘have’-predication.” In M.Simons and T.Galloway, eds., *Proceedings from Semantics and Linguistic Theory V*. Ithaca: Cornell University Department of Linguistics (292-309).
- Stockwell, R.P., P.Schachter and B.H.Partee (1973) *The Major Syntactic Structures of English*. New York: Holt, Rinehart and Winston.
- Szabolcsi, Anna (1994) The Noun Phrase. In F. Kiefer and K. É.Kiss, eds., *Syntax and Semantics, Vol. 27: The Syntactic Structure of Hungarian*. New York: Academic Press. 179-275.

HOMEWORK #5.

Do one or more.

1. a. Suppose the CN/CN meaning of *former* is as given in (i) below. Use the second type-shifting principle in (16bii), Sec. 2.5., to derive the TCN/TCN meaning of *former* given in Lecture 3, p.21. (The CN/CN meaning will be used for examples like *former monastery*, the TCN/TCN meaning for examples like *former wife (of)*; see Section 2.4 above.)

$$(i) \text{Tr}(\text{former}_{\text{CN/CN}}) = \lambda P \lambda x [\text{PAST } [P(x)] \ \& \ \neg P(x)]$$

- b. Homework 3, problem 1, was to do a derivation of *A former teacher of Mary's jogs*. Let's focus just on the CNP *former teacher of Mary's*. It could in principle be given either of the two following structural parses:

$$(i) [\text{former}_{\text{TCN/TCN}} \text{teacher}_{\text{TCN}}] \text{ of Mary's }_{\text{CN/TCN}}$$

$$(ii) [\text{former}_{\text{CN/CN}} [\text{teacher}_{\text{TCN}} [\text{of Mary's }_{\text{CN/TCN}}]]]_{\text{CN}}$$

Some of you already worked out a compositional interpretation of *former teacher of Mary's* using one of these two analyses. Now work out the other one (or both, if you didn't do one before), and show that you get the same result either way.

- c. Why is it that *former teacher of Mary's* gets the same interpretation on either parse, whereas *former mansion of Mary's*, like *Mary's former mansion*, has two different readings?

2. Fill in more details of the argument in Section 2.4., in your own words. Show how *Mary's former mansion* is analyzed on the analysis of Partee 1983, and how it would be analyzed on the suggested version of Jensen and Vikner's analysis (on the "3rd option", the one in which *mansion* shifts to become a TCN.) Describe the difference between the two analyses in your own words. Optionally add some comments on what you think of the argument.

3. Consider the following examples, then see the questions below.

Examples:

(Ex1.) *Mary's brother arrived*. implication of uniqueness comes from the prenominal genitive, which contains the meaning of "the" in it. *Brother* is weakly non-unique; if we found a noun that was "strongly" non-unique, the prenominal genitive in a subject NP should be infelicitous, or necessarily interpreted relative to a restricted domain within which uniqueness could hold. Example: *The palace's window was open*. (odd).

$\text{Mary's}' = \lambda R [\iota z [R(\text{Mary}') (z)]]$ (this is prenominal TCN-taking genitive, for e-type NP)
 $\text{Mary's brother}' = \iota z [\text{brother}' (\text{Mary}') (z)]$

(Ex 2.) *Peter is Mary's brother*. No implication of uniqueness, (maybe a cancellable implicature) because the NP is in predicate position. Not completely sure why; see notes above.

(Ex. 2a.) *That book is Mary's*. No implication of uniqueness, because of semantics of predicative genitive. (But there is an unexplained implication of uniqueness in the other side

of the relation, i.e. that that book is Mary's and no one else's. Is that true for (some? all?) other uses of the genitive?

(Ex. 3.) *A brother of Mary's arrived.* No implication of uniqueness. We can debate whether there is an implication or only a cancellable implicature of non-uniqueness.

of Mary's' = $\lambda R[\lambda x [R(\text{Mary}')](x)]$ (this is postnominal TCN-taking genitive)
brother of Mary's' = $\lambda x [\text{brother}'(\text{Mary}')](x)]$

(Ex. 4). *One of Mary's brothers arrived.* An implication that Mary has more than one brother, from the plural in the partitive.

(Ex. 5). *Mary's favorite brother arrived.* An implication that Mary has more than one brother, or else a joke.

Factors that may influence uniqueness or non-uniqueness entailments include: (i) lexical properties; (ii) semantics of constructions or function words; (iii) type differences (predicative vs referential vs quantificational NPs etc), (iv) pragmatic and contextual factors, including world knowledge and plausibility, etc.

Questions:

3.a. (Exercise.) Show that the semantic rules given in this handout predict, perhaps wrongly, that example 2 above, *Peter is Mary's brother*, does carry a uniqueness implication, i.e. that Mary has one and only one brother.

3.b. (Open question) Suppose occurrence in predicate position in general overrides uniqueness implication of prenominal genitives. How might that come about? (Note that there is no such effect with explicit *the*: *John is the senator* is not interpreted as *John is a senator*.)

3.c. (Exercise, but some work). Explain why *Mary's favorite brother* carries (i) the entailment that Mary likes just one brother best, and (ii) the presupposition that Mary has more than one brother.

3.d. (harder) Suggest why *Mary's favorite brothers* is OK in spite of 3c just above. (This may be easiest to explain on a theory of plurals like G.Link's which recognizes type e "plural entities".)

4. Go back to the questions of Homework 3, and optionally answer any that you didn't answer before, or expand on answers you gave before if new issues have come up since then.