

Constructions and Mixed Categories:
Determining the semantic interpretation of person/number marking¹

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In diverse languages considered separately, each for itself and in its own functioning, the analysis of the relative clause shows a formal structure ordered by a certain function that is not always visible. The problem is to uncover that function. This can be arrived at by observing that the relative clause often has, in a given linguistic system, the same formal marks as another syntagm of a denomination so entirely different that no one would think that they could be related. Guided by this formal analogy, the interpretation of the relative clause becomes possible in terms of function. It is the *internal* relationship which we propose to bring to light first.
 - Emile Benveniste 1971

1. Introduction

This paper focuses on two aspects of pronominal non-subject relative constructions (hereafter NSR) typified by W. Armenian and Dagur in (1) and (2): this type of relative, to the best of my knowledge, has been overlooked in descriptive typological studies, despite being one prevalent pattern of person/number marking for NSRs within the Uralic and Altaic languages of Eurasia. As will be seen, it raises significant questions concerning the theoretical assumptions required for an appropriate account.

W. Armenian:

- | | | |
|---------------------|----------------|-----------|
| 1. (im) | koɽtsadz | təram-əʂ |
| 1SG-GEN | stole-PST/PART | money-1SG |
| ‘the money I stole’ | | |

Dagur: (Hale and Ning 1996)

- | | | |
|----------------------|--------------|-----------|
| 2. mini | aw-sen | mer-min |
| my | buy-PST/PART | horse-1SG |
| ‘the horse I bought’ | | |

The constructions in (1) and (2) consist of a pronominal, verbal adjective (i.e., mixed category) and person/number marking on what will be referred to as the domain nominal (following Keenan 1985).² Given that the participle in these constructions does not narrowly restrict the relation it bears to the domain nominal, i.e., the domain nominal can reflect many different types of NON-SUBJ statuses relative to the participle, these are instances of what Haspelmath 1993 (following Lehmann 1984) refers to as “contextually oriented relative participles.” First of all, I am interested in the semantic interpretation of the person/number markers (PNM) on the domain nominals in (1) and (2): the PNM is semantically

² There is an alternative morphological parse for the Armenian suffixes, where -ə- is analyzed as a determiner/possessor marker and -s- is interpreted pronominally. We will ignore this for the present.

construed as the relation borne by the SUBJ argument of the participle, i.e., the ‘stealer’ in (1) and the ‘buyer’ in (2). The grammatical function and semantic argument requirements of the participle are the only aspects of ‘mixed categoriality’ addressed in this paper: the surface representation of this mixed category is left for another occasion.³ Secondly, I am interested in the form of these constructions, particularly why the PNM appears on the domain nominal, rather than on the participle whose semantic role it bears: this latter distribution, i.e. participles bearing the PNM, is a common pattern we will see attested below.

I begin by introducing two contrasting strategies for the encoding of NSRs, comparing them with simple possessive constructions. Following this I review Hale and Ning's GB analysis for the type of NSR found in (1) and (2): this will be compared with Ackerman and Nikolaeva's LFG analysis of similar constructions. It will be shown that both proposals are descriptively adequate, differing mainly with respect to their compatibility with basic lexicalist assumptions. I will suggest, however, that neither account provides an explanation for the precise distributions of semantics, function assignments and formal expression which they describe and I will develop an argument for an account which does. This is an account which posits two functionally motivated organizing principles of grammar: Function-Form Bi-Uniqueness and Systemic Economy. I will argue that the NSR is functionally a type of relational modification as well as a subtype of the possessive relation encoded by possessive constructions, and that this motivates its formal identity with ordinary possessive constructions. In effect, I hope to be “bringing to light” the sorts of “internal relationships” alluded to by Benveniste in the epigram.

2. Two patterns for NSRs: descriptions and generalizations

Consider the possessive construction containing an optional adnominal modifier (3) and a non-subject (NSR) prenominal relative (4) from E. Ostyak (Vach dialect) and the possessive construction in (5) and NSR in (6) from E. Armenian: this will be referred to as Pattern 1.

Pattern 1: PNM appears on possessed nominal in possessive construction or participle in NSR

Vach Ostyak: (from Tereskin 1961)

3.	(měŋ)	kěčãŋkə	ěpi-γ	= POSSESSIVE
	1PL-NOM	sick	father-1PL	
	‘our sick father’			

³ Questions concerning phrasal coherence, i.e., whether all of the complements associated with the verbal status of the mixed category appear internal to a VP constituent, raise complications which need not be addressed here. (see Bresnan 1997 and Malouf 1998 for discussion and debate.)

4. tini-m-äm loy = NSR
 sold-PART-1SG horse
 ‘the horse I sold’

E. Armenian: (Sigler 1994)⁴

5. girk-əs = POSSESSIVE
 book-1SG
 ‘my book’
6. gn-ac’-əs hovanoc-ə = NSR
 buy-PST/PART-1SG umbrella-ART
 ‘the umbrella I bought’

In (3) and (5) the head nominal (i.e., the possessed element) is an argument-taking element that selects for a nominal bearing the POSS(essor) function. In a theory such as LFG the local domain for argument satisfaction will be the clause nucleus headed by the possessed nominal: moreover, standard analyses within this framework will permit the suffix marking person/number features to be interpreted as a pronominal bearing the POSS function (see Bresnan 1997 for discussion and review). The head nominal is inflected in the lexicon, bringing information concerning features of its incorporated pronominal with it into constituent structure. Commonly, but not always (see Dahlstrom 1992), there is a lexical specification for grammatical function associated with the incorporated pronominal. A schematic entry is represented in (7): the PNM suffixes to a N and is a pronominal bearing the POSS function: the PNM suffixes to a N and is a pronominal bearing the POSS function.

7. N_{infl} $(\uparrow \text{POSS}) = \downarrow$
 $(\downarrow \text{AGR}) = \alpha$
 $(\downarrow \text{PRED}) = \text{‘pro’}$

In (4) and (6) we see pronominal relatives modifying the domain nominal, i.e., the non-subject nominal: the head of the modifying clause is a non-finite verbal element (mixed category), i.e., participial form. The PNM on the participial modifier satisfies an argument requirement of the participle within the local domain it defines: in particular, the participle heads a clause nucleus and the person/number marker is interpretable as a pronoun satisfying the SUBJ function within that nucleus. Once again, this combination of information and form can be represented by a lexical specification of the suffix as a pronominal bearing a particular grammatical function selected by the head, as in (8): the PNM suffixes to

⁴ There is a parallelism between possessives and NSRs observed in Sigler’s account, namely, there is complementary distribution between an overt genitive marked independent pronoun and a pronominal affix in both constructions.

a V and is a pronominal bearing the SUBJ function: the PNM suffixes to a V and is a pronominal bearing the SUBJ function.

$$\begin{aligned}
 8. \text{V}_{\text{PART}}\text{infl} \quad (\uparrow \text{SUBJ}) &= \downarrow \\
 &(\downarrow \text{AGR}) = \alpha \\
 &(\downarrow \text{PRED}) = \text{'pro'}
 \end{aligned}$$

Theories of grammar generally posit locality conditions on the distribution of certain phenomena. For example, conditions on agreement and argument satisfaction are formulated in terms of local domains, with apparent counter-examples being analyzed as instances of long-distance dependencies: a head agrees with an argument in its local domain, while the arguments of heads are satisfied internal to some specifiable local domain. Given that the distributions in 3-6 are compatible with the postulation of two related, but distinct affixal lexical entries, as in (7) and (8), let's call this proposal the Functionally Distinct Affix Hypothesis: lexical specification of grammatical functions for pronominal arguments of heads is quite straightforward, entailing distinct, but clearly related entries for affixes, co-occurring with different lexical category stems, i.e., nominal versus verbal. Each lexical entry, crucially, exhibits a grammatical function appropriate to the requirements of the functional head in each domain. If all distributions looked like those in Pattern 1 we could reach closure on a lexicalist proposal for pronominal incorporation in these two construction types. In effect, Pattern 1 exhibits the effects of what might be referred to as Function-Form Bi-uniqueness, following the observations of numerous functional typologists and child language acquisition researchers.

Function-Form Bi-uniqueness: grammars strive to align distinguishable functions with distinct forms. (each distinct function should have a unique form, and each form should have a distinct function)

Now consider what I will refer to as Pattern 2, exemplified by W. Armenian and Dagur. In addition to the NSRs we have seen in (1) and (2), and repeated below, we have the standard possessive constructions in (9) and (10):⁵

⁵ See Ackerman and Nikolaeva 1997, Sigler 1994, 1997 and Samuelian 1989 for examples of several sorts of NSRs in W. Armenian. A type of example omitted from that work led to an erroneous generalization concerning the class of participles which participate in NSRs: it was suggested there that the participles must be active. This is incorrect as indicated by the fact that passive participles can participate in this construction:

im əspannə-v-adz kəkək-əs
 my kill-PASS-PART city-1SG
 `the city where I was killed'

Pattern 2: PNM appears on possessed nominal in possessive construction or domain nominal in NSR

W. Armenian:

- | | | | | |
|----|---------|---------------------|------------|--------------|
| 1. | (im) | koʁtsadz | təram-əs | = NSR |
| | 1SG-GEN | stole-PST/PART | money-1SG | |
| | | ‘the money I stole’ | | |
| 9. | (im) | hin | naverəs | = POSSESSIVE |
| | my | old | letter-1SG | |
| | | ‘my old letter’ | | |

Dagur: (Hale and Ning 1996)

- | | | | | |
|-----|------|----------------------|-----------|--------------|
| 2. | mini | aw-sen | mer-min | = NSR |
| | my | buy-PST | horse-1SG | |
| | | ‘the horse I bought’ | | |
| 10. | mini | mer-min | | = POSSESSIVE |
| | my | horse-1SG | | |
| | | ‘my horse’ | | |

In (9) and (10) we see the same pattern as in (3) and (5): these are simply possessive constructions with PNM's functioning as pronominals satisfying the syntactic POSS function. However, in (1) and (2) we see that in NSRS it is the domain nominal that hosts PNM's, rather than the perfect participle, as in (4) and (6). The (4) and (6), but yields an interpretation identical to that in (4) and (6): in other words, the PNM in all NSRs is identified both functionally (i.e. as the SUBJ) and semantically (i.e., as the semantic argument) with the selection requirements of the co-occurring perfect participle. A mechanical application of the Functionally Distinct Affix Hypothesis to Pattern 2, obviously faces problems: (1) the two entries cannot be distinguished in terms of their categorial distribution, since they both appear on the same category, namely, N; (2) if there are really two distinct entries, then what will determine when the one with the appropriate function should appear, (3) won't the distribution of PNM in (1) and (2) represent a violation of locality, since the SUBJ of the participle is not realized internal to the local domain defined by the participle?

Descriptively, (1) and (2) seem relativized to the possessive construction found in (9) and (10). This assimilation of the NSR to the possessive construction might be viewed as a way of achieving what can be referred to as Systemic Economy:

Systemic Economy : grammars strive to limit the number of distinct expression types contained in them. (do as much as you can, with as little as you can)

Since this will be relevant later, it is worth observing that Form-Function Bi-Uniqueness and Systemic Economy appear to interact cooperatively in Pattern 1. Since in this pattern NSRs are functionally distinct from possessive constructions, Function-Form Bi-Uniqueness motivates encoding them distinctively, while Systemic Economy achieves this purpose by redeploying certain old pieces to new purposes. For example, it preserves the general modification structure of NPs and reuse the pronominal status and function satisfying role of PNMs associated with possessive construction for NSRs. Concerning Pattern 2, the analogical use of the possessive construction to encode NSRs seems wholly motivated by Systemic Economy: this would appear to obscure the different functions associated with these construction types, with the effect that formal expression seems to be the sole consideration here. So, one can ask what licenses this apparent disregard for functional distinctions, or alternatively, when does systemic economy kick in? This will be the main question addressed in section 4.

Having examined two contrasting patterns for the marking of NSRS, their relation to possessive constructions, and identified two competing functional principles associable with each pattern, I turn to two previous theoretical attempts to address pattern 2. The basic results of this section are summarized below:

Motivation: Function-Form Bi-U/Systemic Economy

Systemic Economy

Pattern 1: E. Armenian/Vach Ostyak

Pattern 2: W. Armenian/Dagur:

“possessive”: (NP₁) ADJ NP₂-PNM

(NP₁) (ADJ) NP₂-PNM

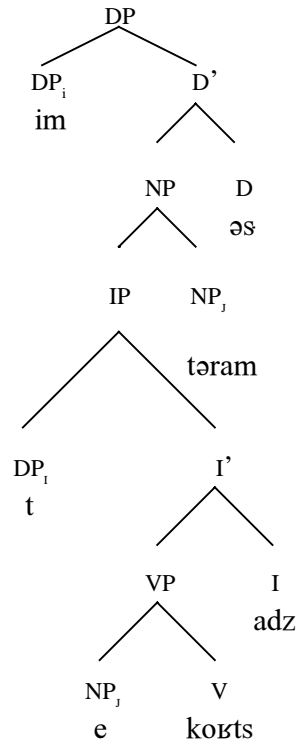
"arg of PART": (NP₁) PART-PNM NP₂-Ÿ

(NP₁) PART NP₂-PNM

3. Two theoretical accounts of Pattern 2

Hale and Ning (1996) argue that constructions such as those in (1) and (2) provide intriguing evidence for the hypothesis that SPEC of DP is not a theta-marked position. Adapting Hale and Ning’s account to W. Armenian for purposes of exposition (see Sigler 1997 for speculation along these lines within the Minimalist Program) we can represent constructions such as that in (1) as in (11):

11. Representation of 'the money I stole':



On Hale and Ning's analysis, the IP represents a complete functional complex containing the verb and both its SUBJ and OBJ complements: the OBJ is represented as a variable identified with the domain nominal (hence the co-indexation NP_j for both 'e' and 'money'), while the SUBJ is interpreted simply as a SUBJ which has been raised into SPEC of DP position in order to receive case from an AGR presumed to be present in D: it must raise in order to receive case, since there is no AGR internal to IP. Analyzed as an instance of raising, the SUBJ receives its theta role from the V contained within the IP and moves to a position which cannot be assigned a theta role, in order to avoid being assigned multiple theta-roles, i.e., one from the V and one from D: this requires that SPEC of DP, i.e., the landing site for the raised SUBJ, must not be a position which is assigned a theta role. Although it is not clear from their account whether the nominal in SPEC of DP in Dagur is optional, as in W. Armenian, it is clear that a simple assumption could deal with optionality: it might be assumed that 'pro' raises to SPEC of DP.

Hale and Ning's account captures an important property of these constructions, namely, that the element serving, in effect, the 'possessor' grammatical function in the NSR has a semantic role provided by the verbal participle. On the other hand, they observe that the way in which

they achieve this result yields a paradox for the analysis of simple possessive phrases: if SPEC of DP is not a theta-position, then how does the ordinary possessor phrase receive its theta-role in constructions such as (9) and (10), since, as they note, there is clearly a possessor role in these constructions. They speculate that certain (unspecified) work on Constructional Theta Role Assignment might provide an appropriate resolution to this paradox. On such an approach, an element in SPEC of DP which has not already received a theta-role from anything else will be assigned the 'possessor' role by default. In effect, the claim appears to be that whereas unmarked or normal mechanisms of theta-assignment (in conjunction with raising in NSRs) yield structures which block default 'possessor' assignment, a marked constructional mechanism provides default assignment when normal mechanisms and raising fail to apply. Hale and Ning do not provide a characterization of what is meant by 'possessor' assignment⁶, what the status of constructions are in the theory of grammar they assume, nor precisely how the mechanism of constructional theta-assignment operates. These issues will be addressed below.

From the perspective of a lexicalist theory such as LFG there are several obviously problematic properties with an analysis such as that in (11). First, the phrase structure configuration in (11) represents clear violations of lexical integrity, since affixes occupy terminal constituent structure nodes: this will entail word-formation and Xo movement within constituent structure. Second, the functional-semantic properties of the participial phrase, which make it desirable to treat it as a complete functional complex, require that it be represented as an IP, given the theoretical assumptions adopted by Hale and Ning: this will also require positing syntactic movement of either overt elements (lexical NPs or pronominals) or covert elements in the case of an optionally filled SPEC of DP. These violations of lexicalism are straightforwardly addressed in Ackerman and Nikolaeva's proposal (1997) in which the functional-semantic aspects of the construction are relegated to F-structure and lexical integrity is obeyed. On this analysis it is sufficient to posit a single lexical entry for the affix as in (7), in order to yield a lexical representation for a nominal as in (12):

12. təram-əs N `money < POSS >
 POSS PRED = `pro'
 PERS = 1
 NUM = SG

This lexical entry will account for the pronominal interpretation of POSS complements in simple possessive constructions such as 'my money'. It can also account for NSRs, though the precise manner in which the semantic role of the SUBJ of the participle is identified with the PNM is left inexplicit in

⁶ Of course within the theory they assume theta-assignment is more a diacritic operation than a substantive claim about specific semantic roles, so I am perhaps being overgenerous (to the point of potential misinterpretation) in exploring what the POSS role actually means.

Ackerman and Nikolaeva where it is stipulated that the pronominal bears this role by virtue of functional control between the POSS and the SUBJ of the participle. One way to capture the “raising” effects exhibited by this construction would be to posit constructionally induced control associated with the relative participle as in (13), where RELMOD refers to the relative clause headed by the participle:

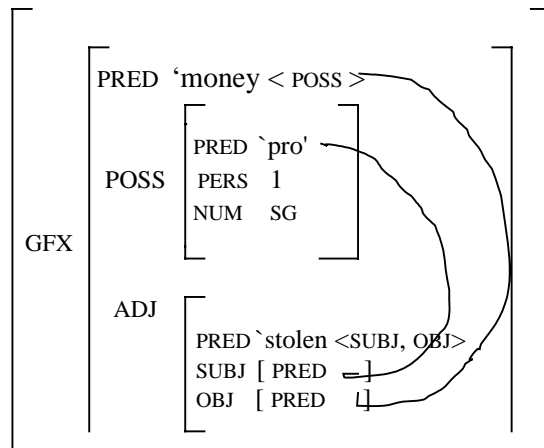
13. NP ---> VP NP
 \uparrow RELMOD = \downarrow
 $(\downarrow$ SUBJ) = $(\uparrow$ POSS)
 VFORM = c PERFECT

Given a lexical entry for participles like ‘stolen’ as in (14):⁷

14. korčtsadz Vperf ‘stolen < SUBJ, OBJ > ‘

NSRs will yield the F-structure in (15), given the annotation on the VP in (13) which insures a relation of functional control between the POSS function of the NP and the SUBJ function of the participle.⁸

15.



⁷ This actually represents a simplification of a challenging problem, namely, that one cannot know from the functions appearing in the lexical entry alone whether or not a PNM will receive an interpretation associated with a NSR. This is because, as observed in Samuelian 1989, Sigler 1994 and Ackerman and Nikolaeva 1997, the non-SUBJ can be an ADJUNCT. The NSR in footnote 4 provides an illustration.

⁸ I am assuming that something on par with Hale and Ning’s coindexation of the empty category with the domain nominal accounts for the identification of the participle’s OBJ with the domain nominal. So, $(\downarrow$ GF -SUBJ) = $(\uparrow$ GF). See below for further discussion. For simple adjectival modification one might provisionally assume a phrase structure rule such as:

NP -> AP NP
 $(\downarrow$ SUBJ) = $(\uparrow$ GF)

where the SUBJ of the adjective is identified with the value of nominal heading and bearing the GF of the expanded NP.

We see that the domain nominal (which presumably provides a value for some grammatical function within a clause, hence GF_x) supplies a PRED value for the OBJ function of the participle, while the PRED and feature values of the POSS function supplies values for the SUBJ function of the participle. The use of constructionally induced control accords with the intuition that it is the cooccurrence of the inflected nominal and the relative participle within a possessive construction which is responsible for the observed “raising” effects. That is, the semantic interpretation of the PNM is a constructionally constrained.

In sum, both the accounts of Hale & Ning and Ackerman & Nikolaeva provide reasonable and perspicuous representations for describing the central properties of NSRs, including the relevance of constructional considerations for an adequate account. On the other hand, neither as presently formulated would seem to provide insight into why these structures are the way they are. The implied question here is whether an understanding of why we find particular surface expressions yields insights into the sorts of notions which a synchronic theory of grammar should recognize and reflect.

4. Why things are the way they are

I think that the key to understanding why these constructions look the way they do is to better understand the semantics of possessive and modification constructions: these are dimensions of the NSRs that are essentially ignored in the accounts I have reviewed previously, and I believe they are the dimensions that will also explain why systemic economy is licensed in W. Armenian and Dagur.

It is important to observe that lexical specification for nominals such as that in (12) simply specifies selection for a POSS syntactic function: this means that a nominal heading a possessive construction selects for a syntactic complement. In what follows, I will adopt the hypothesis, but not the mapping theory implementation, found in Laczko 1997 according to which the POSS function is “semantically unrestricted” (see also Szabolcsi 1994): on this hypothesis, it is not necessary that there be a specific semantic interpretation for this syntactic argument which follows from the meaning of the possessed nominal or from the possessive predicate. This is as it should be, since in possessive phrases such as ‘my money’ it is simply vague or indeterminate what the appropriate semantic interpretation of the possessor argument to the possessed nominal should be: this presumably corresponds to what Hale and Ning refer to as the ‘default’ theta-role of possession. In fact, following Barker 1991 (see also Jackendoff 1977), I will assume that this role corresponds to “extrinsic possession”: (Barker 1991:53)

I will call non-lexical possession EXTRINSIC POSSESSION, since it depends for its value on pragmatic factors determined by the context in which the possessive is uttered.

This contrasts in Barker’s theory with “lexical possession” where the semantic interpretation of the possessor is determined by the meaning associated with a relational nominal. For example, a nominal

such as `child' being inherently relational encourages a lexically determined interpretation of `parent' for the possessor in such phrases as `my child', while not excluding alternative interpretations in terms of `extrinsic possession', e.g. `the child I am presently responsible for'. Similarly, and crucial for the proposal here, deverbal relational nominals such as `purchase' and gerunds such as `purchasing' express "lexical possession" relations: for example, in "my purchasing" the possessor is restricted to being a "purchaser". In sum, the possessive relation is interpretable as a two place relation between a possessor and a possessee, where the precise nature of the possessive relation is determined either pragmatically or lexically.

Returning to the NSRs in W. Armenian, it is reasonable to interpret a nominal such as *tġram* `money' as not being intrinsically relational, so that when inflected with a PNM, e.g. *tġram-aš* `my money', there is only an interpretation of the syntactic POSS complement in terms of "extrinsic possession". What Hale and Ning refer to as Constructional Theta-Assignment, in other words, is nothing other than a pragmatically determined interpretation for the syntactic POSS argument. I suspect that what Hale and Ning intended was that, in some sense, this is the elsewhere interpretation provided to the possessive construction. But this can't be correct, since, as we have seen, the interpretation does not depend on the construction, but rather on lexical properties of the possessed nominal within the construction. On the other hand, I would like to suggest that the restriction on the possessive relation in NSRs, arising in Hale and Ning's account as a result of lexical theta-assignment and raising, is indeed an instance of constructional assignment, parasitic on the type of "lexical possession" described above. The relevant configuration is insured by the phrase structure rule in (13). This rule, however, raises questions concerning the explanatory status of such annotated phrasal constructions within LFG and how it might relate to the role of phrasal constructions in frameworks where they are hypothesized to participate in networks of construction types and subtypes.⁹ Is it sufficient for a framework to have a representational apparatus which can achieve constructional effects or is it necessary for a framework to recognize constructions in their own right?

Following work within constructional approaches to grammar (see Fillmore and Kay 1996, Y. Matsumoto 1996, Ackerman and Webelhuth 1998, Malouf 1998, Sag 1998, among others), I will assume that the NSR is a subtype of the general modification construction in this language. Simplifying greatly, in a general modification construction a simple adnominal modifier such as *hin* `old', in example (6), expresses a one-place relation: the nominal it modifies is semantically identified with its sole argument,

⁹ This issue also arises arguably in Bresnan 1995 where it is hypothesized that a templatic presentational construction superimposes its grammatical function specifications on certain intransitive predicates which would not otherwise be candidates for undergoing a lexical operation of locative inversion. In both instances it appears that lexical properties are extended to phrasal constructions, suggesting that some phrasal constructions are motivated and constrained by certain lexical properties. See below for discussion.

i.e., its SUBJ argument. In contrast, a past perfect participle such as *koʔtsadz* ‘stolen’ in (1) expresses a two-place relation both when it functions predicatively as the head of a clause and when it functions adnominally/attributively as a modifier internal to an NP: in the lexical entry for (14) the participle has both a SUBJ and OBJ argument. This means that it will have to find values for both of these functions. The two place-predicate aspect of the participle becomes evident when it itself is used nominally in a possessive construction. In (16), for example, ‘my stolen thing’ can only have the “lexical possessive” reading ‘the thing I stole’, and not an “extrinsic possessive” reading such as ‘the thing I have which someone else stole’.

- (16) (im) koʔtsadz-əs
 1-SG/GEN stolen-1SG
 ‘my stolen thing’
 * ‘the thing I have which someone else stole’

Crucially, this lexical possessive restriction is maintained when the participle functions adnominally. Recall that a possessive relation is a two-place relation where the semantic value of the possessive relation is defined either lexically or pragmatically. In the case of NSRs, the adnominal modifier imposes a restriction on the possessive relation, consonant with its lexical properties: this precludes an extrinsic or pragmatic interpretation. That is, there is constructional determination of the semantics of the possessive relation which is parasitic on lexical properties of the relative participle modifier. The NSR is simply a constructional extension of the basic lexical operations which narrow the interpretation of the possessive relation. This can be represented as in (17), where the possessive predicate is interpreted as a function that takes the (meaning of the) participle as an argument:

$$(17) [\lambda\pi \pi (\text{MONEY}, I)] (\text{STOLEN}') = \text{STOLEN} (\text{MONEY}, I)$$

The fact that the participle serves to restrict the interpretation of the domain nominal is not surprising when the diachrony of this pattern is considered. The historically prior pattern is exhibited by the NSRs in Pattern 1, where the adnominal modifiers themselves are inflected: these elements functioned as verbal nouns in apposition to the domain nominal which served to specify the referent of their non-SUBJ complement.

Viewed from the perspective of both possessive and modification constructions, I believe it becomes clear why Systemic Economy operates to create this particular pattern of NSRs.¹⁰ This is

¹⁰ In construction-oriented approaches grammatical constructions are standardly related via multi-inheritance hierarchies. With this kind of representational schema in mind it is natural to think of the NSR construction as inheriting various properties of both adnominal modification and possessive structure schemata.

because NSRS as adnominal constructions must modify a head nominal identified with one of its complements, while the relational and two-place predicate status of the modifier naturally fits the pattern for lexical determination of the possessor relation within possessive constructions. In particular, NSRS are simply a modification structure variant on the sort of “lexical possessives” associated with relational words which provide a more specific or restricted semantic interpretation for the possessor relation than the “extrinsic possessives” rendered by pragmatic factors. In this sense, NSRs are construed as a variant of relational noun constructions, and specifically, that sort in which the relational noun functions adnominally. In effect, then, Systemic Economy is licensed, leading to formal identity between NSRS and possessive constructions, because at a more abstract level of analysis than the obvious difference between NSRs as relatives and ordinary possessive NPs, the grammar is actually following the principle of Function-Form Bi-Uniqueness: the NSR, possessing a participial two-place predicate, is a logical candidate for assimilation into the possessive pattern, since it is analyzable as participating in the standard mechanisms for determining the semantic interpretation for the two-place relation characteristic of possessive constructions.

The construal of the NSR as a type of possessive construction and the consequent assimilation of it into the formal pattern for possessive recalls the distinction between *reanalysis* versus *extension* proposed in Harris and Campbell 1995:51:

Reanalysis is a mechanism which changes the underlying structure of a syntactic pattern and which does not involve any modification of its surface manifestation...

Extension is a mechanism which results in changes in the surface manifestation of a pattern and which does not involve immediate or intrinsic modification of underlying structure.

In effect, the NSR of pattern 2 is reanalyzed as functionally assimilable to the possessive construction and then assumes the surface encoding of this construction.

In sum, it seems necessary to recognize the NSR as identified within a network of constructions in order to understand the functional factors that motivate the “extension” based forms in what I have referred to as Pattern 2. The present appeal to functionally based considerations and their effects on grammatical form would seem to raise the question of modelling these results within some recent lexically-based Optimality Theoretic approaches to syntax and morphology.¹¹ On the other hand, it is obvious that the present proposal, if worth formalizing, seems amenable to several different sorts of implementations, possibly within the OT paradigm, or perhaps within a lexically-based multiple inheritance constructional approach which posits grammatical archetypes (see Ackerman and Webelhuth 1998, Malouf 1998) or “universally available syntactic constructions” (Harris and Campbell 1995). On

¹¹ See for example Aissen 1997 and Bresnan 1998.

either alternative it is crucial to provide principles for calculating markedness and functional motivation for the observed correspondences between Benveniste's "internal relationships" and their surface expression. This is an issue currently under investigation.¹²

In conclusion, I have argued that an account such as that proposed in Ackerman and Nikolaeva goes some way toward providing a lexicalist analysis of NSR constructions. I believe that such an account, when augmented by explicit considerations of possession and modification viewed constructionally, promises to provide an explanation for the typology of NSRs reflected in Patterns 1 and 2. In this sense, both the explicit semantic speculations in Hale and Ning's account as well as the postulation of constructionally induced functional control and the lexical analysis of possessive constructions on the LFG account provide useful insights into the relevant aspects of a complete account of these construction types.

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¹² In certain respects the issues raised by these constructions with pronominal incorporation resemble the challenges posed by modification of denominal verbs in languages like Greenlandic Eskimo as analyzed in Van Geenhoven 1998 and Malouf 1998.

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