Antrag auf Gewährung einer Sachbeihilfe

1. General information / Allgemeine Angaben

This is a new proposal.

1.1 Applicants (Antragsteller)

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1.2 Topic (Thema)

Syntax/semantics mismatches in externally and internally headed relative constructions.

Syntax/Semantik-Konfigurationen in Relativsätzen mit externen und internen Köpfen.

1.3 Fach- und Arbeitsrichtung

Allgemeine Sprachwissenschaft; Syntax und Semantik

1.4 Antragszeitraum

1.7. 2010 – 30. 6. 2013

1.5 Summary / Zusammenfassung

The project studies the ways in which syntactic structures are semantically interpreted, focusing on two apparent mismatches: (i) narrow-scope readings of heads in externally-headed relative constructions, where the head semantically depends on some operator within the relative clause (so-called "reconstruction") and (ii) wide-scope readings of internally-headed relative constructions, where the head, though syntactically part of the relative clause, appears to scope over the relative construction ("exconstruction"). Two theoretical alternatives will be considered: (a) assuming syntactic structure enriched by a particular representation level like Logical Form (LF) that can be interpreted by ordinary semantic operations; (b) assuming semantic interpretation enriched by type shifting operations that allow for interpretation of overt syntactic structures for which there is direct syntactic evidence. Our goal is to asssess whether one of the two approaches is preferable on empirical and/or conceptual grounds, thus providing a decisive contribution to the most important theoretical issue concerning the syntax/semantics interface.

Das Projekt untersucht, wie syntaktische Strukturen semantisch interpretiert werden, und konzentriert sich dabei auf zwei scheinbare Missverhältnisse: (i) Lesarten, in denen der externe Kopf eines Relativsatzes im Skopus eines relativsatz-internen Operators steht (sogenannte "Rekonstruktion"), und (ii) Lesarten von Relativsätzen mit internem Kopf, in denen der Kopf scheinbar Skopus über die gesamte Relativsatzkonstruktion besitzt (die "Exkonstruktion" genannt werden soll). Es werden zwei theoretische Alternativen der Beschreibung erwogen: (a) Syntaktische Strukturen, die durch eine eigene Repräsentationsebene der Logischen Form angereichert sind, die direkt interpretiert werden kann; (b) semantische Interpretationen, die durch Typenverschiebungs-Operationen angereichert sind, welche es erlauben, die Strukturen, für die es tatsächliche syntaktische Evidenz gibt, direkt zu interpretieren. Ziel ist es, zu bewerten, ob eine dieser Optionen aus empirischen oder konzeptuellen Gründen zu bevorzugen ist, und damit einen entscheidenden Beitrag in der wohl wichtigsten theoretischen Debatte zur Architektur der Syntax/Semantik-Schnittstelle zu leisten.

2. Stand der Forschung und eigene Vorarbeiten

2.1 Stand der Forschung / Current State of Research

2.1.1 Two theoretical perspectives: LF interpretation vs. Surface Interpretation

One of the foundational issues of linguistic theory in the last decades revolves around the nature of the syntax/semantics interface. The basic assumptions are uncontroversial: The role of syntax is to construct complex expressions from simpler ones, ultimately from words or morphemes provided by the lexicon, whereas the role of semantics is to endow them with meaning in a compositional way, which may be pragmatically enriched. This is uncontroversial in many cases, in which the meaning of of a complex expression that, by purely syntactic criteria, is assigned a structure like, say, $[\alpha\ [\beta\ \gamma]]$, depends on the meaning of α and $[\beta\ \gamma]$, which in turn depends on the meaning of β and γ. However, there are cases in which, say, γ is an operator that has semantic scope over α, a configuration which does not allow for a straightforward semantic interpretation. Two major strategies have been proposed for such cases (cf. Jacobson 2002 and Ruys & Winter, to appear):

(a) Semantic interpretation is able to "look into" the way in which syntactic constituents are formed. In the case at hand, semantic interpretation can somehow detect the occurrence of β when interpreting $[\alpha\ [\beta\ \gamma]]$. The best-known way in which this is spelled out in generative grammar, including its minimalist versions, is to assume a separate syntactic structure called Logical Form (LF) that is the input to semantic interpretation, in our example something like $[\gamma_i[\alpha\ [\beta\ \_i]]]$, as proposed by Chomsky (1976) and May (1977) and in much research thereafter, e.g. Heim & Kratzer (1998), a standard textbook in semantics. Other ways consist in assuming a different syntactic structure to achieve the right interpretation, e.g. $[[\alpha\ \beta]\ \gamma]$ (cf. e.g. Steedman 2000), or non-linear syntactic operations like wrapping (cf. Bach 1987). A potential conceptual problem with this approach is that it stipulates structures in syntax just for the purpose of semantic interpretation; one would like to see genuinely syntactic evidence for such approaches.

(b) Semantic interpretation is strictly compositional, that is, it cannot look into the way in which syntactic constituents are formed. This means for our example that $[\beta\ \gamma]$ must be interpreted so that it is guaranteed that γ will end up with semantic scope over α. There are versions that mimick LF interpretation in enriching semantic interpretation for the purpose of getting scope phenomena right, in particular quantifier storage (Cooper 1977). Within this approach, the interpretation of $[\beta\ \gamma]$ is a pair, $\langle\ \gamma\ ,\ \lambda x_i[\ \beta\ x_i\ ]\rangle$ that makes it possible to relate the meaning of element γ to the position of the variable, and to delay the interpretation of γ. If this is done just for the purpose of achieving

wide-scope interpretation, similar conceptual problems arise as with the (a) approaches. Other versions achieve wide-scope interpretation by type-shifting of the meanings. In our example, γ is shifted to a higher type that results in a meaning for [β γ] of the form $\lambda X[\gamma(X(\beta))]$ that takes α as argument and places it under the scope of γ. For example, Hendriks (1993) proposed that transitive verbs, type $\langle e,\langle e,t\rangle\rangle$, can be shifted in two distinct ways so that they take arguments of quantifier type, with the result of representing the narrow-scope and the wide-scope reading of operators. Alternatively, approaches in combinatorial grammar (e.g., van Benthem 1989, Jäger 2005) have relied on different rules to combine constituents that lead to differential scopal effects.

Roughly speaking, the (a) approaches enrich syntax, whereas the (b) approaches enrich semantics to achieve appropriate semantic interpretations. Among these approaches I will mainly compare those that assume a separate level of logical form (a), and those that assume type shifting (b), because it appears that most analyses of particular phenomena have been worked out in these general frameworks, and quite often other approaches have the appearance of being mere notational varants. I will call these approaches **LF interpretation** and **Surface interpretation**, respectively.

To be specific, I will consider a classical case of scope ambiguity:

(1)   **A flag** is flying on *every government building*.

The sentence has a structurally prominent reading in which *a flag* scopes over *every government building*, but as this is physically impossible, the reading in which *every government building* scopes over *a flag* is the intuitively prominent one. This ambiguity can be analyzed by appealing to LF with quantifier raising, as follows:

(2)   a. [a flag] $_i$[[every government building] $_j$[_$_i$ is flying on _$_j$]]]
        b. [every government building] $_j$[[a flag] $_i$[_$_i$ is flying on _$_j$]]]

There exist various options for a Surface interpretation approach: We can mimick quantifier raising in semantics with Cooper storage. We can assume an alternative surface structure that ensures that the wide-scope quantifier c-commands the narrow-scope one, as in [[*a flag is found*] [*on every government building*]]. We can also assume that the wide-scope quantifier is type-lifted as to get scope over the subject quantifier, as in (3), specifically in (b); for the narrow-scope reading we would have a quantifier meaning $\lambda\underline{R}\lambda P\lambda x\forall y[building(y) \rightarrow \underline{R}(y)(P)]$. Here and in the following, x, y are variables of type e, P is a variable of type $\langle e,t\rangle$, Q is a variable of type $\langle\langle e,t\rangle,t\rangle$, and $\underline{R}$ is a variable of type $\langle e,\langle\langle e,t\rangle,t\rangle\rangle$.

(3)   a. [$_P$ on]: $\lambda y\lambda P\lambda x[P(x) \wedge on(y)(x)]$
        b. [$_{DP}$ every building]: $\lambda\underline{R}\lambda P\lambda Q\forall y[building(y) \rightarrow Q(\underline{R}(y)(P))]$
        c. [$_{PP}$ on every building]: $\lambda P\lambda Q\forall y[building(y) \rightarrow Q(\lambda x[P(x) \wedge on(y)(x)])]$
        d. [$_{VP}$ is flying]: $\lambda x[fly(x)]$
        e. [$_{VP}$ is flying on every building] $\lambda Q\forall y[building(y) \rightarrow Q(\lambda x[fly(x) \wedge on(y)(x)])]$
        f. [$_{DP}$ a flag]: $\lambda P\exists x[flag(x) \wedge P(x)]$
        g. [$_{CP}$ a flag is flying on $\forall y[building(y) \rightarrow \exists x[flag(x) \wedge fly(x) \wedge on(y)(x)]]$
           every building]:

Both LF interpretation and Surface interpretation can explain a range of phenomena; in particular, both can be restricted in natural ways such that they predict the well-known island restrictions in the scope-taking behavior of expressions. But the two approaches may not cover all observable phenomena, and may provide fundamentally different solutions to particular phenomena. Beyond such empirical considerations, there may be differences in the naturalness of the proposed solutions; one framework may account for a particular phenomenon with straightforward and independently justified means, while the other may have to appeal to ad-hoc assumptions. Such differ-

ences should provide a conceptual basis for preferring one or the other strategy. However, due to the wide variety of phenomena that have been discovered and described in the last half century of research, and the complexity of the specific theories that have been developed within various branches of generative syntax and formal semantics, it is extremely difficult to achieve anything like a consensus in this field. There is a growing feeling that this sorry state hampers the progress of linguistics in one of its central areas, a sentiment that is eloquently expressed in Pauline Jacobson's contribution "The (dis)organization of the grammar: 25 years" to the anniversary issue in 2002 of the journal *Linguistics and Philosophy* (Jacobson 2002b).

The central goal of this project is to improve this state of affairs by a systematic reconsideration of phenomena that bear on the issue of the proper architecture of the syntax/semantics interface. Within this general goal, I propose to concentrate on two major types of effects, both of which should be examined in relation to relative clause constructions in a variety of typologically diverse languages, but with implications for other constructions with comparable effects.

2.1.2 Reconstruction effects

One type is that of the so-called reconstruction effects, which provide good prima facie arguments for LF interpretation. Reconstruction effects in general involve surface structures of the form $[\alpha\ [\beta\ [...]]$, where α c-commands β, but in interpretation depends on β. LF interpretation stipulates that α originates from the c-command domain of β, resulting in a surface structure $[\alpha\ _i[\beta\ [..._i\ ...]]]$, but that for interpretation reasons α is "reconstructed" in the position of its gap, $[\ \_\ [\beta\ [...\ \alpha\ ...]]]$. Within a copy-theory of movement (Chomsky 1993), this can be expressed by assuming a structure $[\alpha\ [\beta\ [...\alpha...]]]$ in which the higher copy of α is pronounced, but not interpreted, and the lower copy is not pronounced, but interpreted.

This situation arises in several linguistic constructions, in particular, in interrogatives, clefts, sentences with initial topics, and relative clauses, but I will concentrate here on externally-headed relative clause constructions. I will illustrate in (4) one particular kind of reconstruction effect (the elements α, β, and the gap are indicated by italics, boldfacing, and '__' respectively). Observe that the pronoun *his* within α is construed as bound by the distributive universal quantifier *every* within β, even though *every* does not c-command *his*.

(4)　　[The [$_{NP}$ *relative of his$_i$*] [$_{CP}$ that **every boy$_i$** likes __ the most]] is his$_i$ mother.

Classical reconstruction results in the structure (5.a), and the copying-theory of movement results in the structure (5.b) as input of interpretation.

(5)　　a. [$_{DP}$ The _ [$_{CP}$ that **every boy$_i$** likes [$_{NP}$ *relative of his$_i$*] the most]] is his$_i$ mother.
　　　　b. [$_{DP}$ The [$_{NP}$ ~~*relative of his*~~] [$_{CP}$ that **every boy$_i$** likes [$_{NP}$ *relative of his$_i$*] the most]] is his$_i$ mother.

Importantly, the bracketed NP in (5a,b) cannot combine with the relative clause by intersection, as is normally the case for 'ordinary' relative constructions; rather, it needs to be interpreted within the relative in some way. Within the copy theory of movement, this approach has been appealed to by a number of researchers (e.g., Fox 1999, 2002, Sauerland 1998, Bhatt 2002, Hulsey & Sauerland 2006) in relation to a wide variety of reconstruction effects, the general idea being that the lower chain-copy is construed as a restriction on an individual variable (a mechanism that Fox 2002 calls "Trace Conversion").

A surface interpration approach was explored in von Stechow (1990), Jacobson (1994, 2002a, 2004) and Sharvit (1996, 1999) in relation to data like (4), building on analyses of comparable interrogative constructions in Groenendijk & Stockhof (1983) and Engdahl (1986). One version is illustrated below. It assumes that the gap in the relative clause and the pronoun *his* can be inter-

preted as applying to a relation R yielding a function f such that the outermost argument x is related to f(x) of R (cf. (6.a,f), or as applying to a function f restricting the domain of the function (cf. l). It assumes function composition as a mode of meaning combination (cf. d) and a rule that reduces a two-place relation of type $\langle\sigma,\langle\tau,t\rangle\rangle$ to a set of functions of type $\langle\langle\sigma,\tau\rangle,t\rangle$ (cf. h). The interpretation of the relative clause is intersective (cf. i), the definite article is interpreted as the unique, or rather as the maximal, entity of a set, here as the maximal function that is positively defined (cf. j and Grosu & Krifka 2007 for details), and the main predication is an identity statement (or rather, the DP function is a restriction of the predicate function). I use R and f as variables of type $\langle e,\langle e,t\rangle\rangle$ and $\langle e,e\rangle$, and notations like $\lambda v{:}\alpha[\beta]$ for functions restricted to α.

(6) a. [$_{DP}$ _]: $\quad\quad\quad\quad\quad\quad$ $\lambda R\lambda f\lambda x[R(f(x))(x)]$
  b. [$_{VP}$ likes _]: $\quad\quad\quad\quad$ $\lambda R\lambda f\lambda x[R(x)(f(x))](\lambda x\lambda y[x$ likes $y])$,
   $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ = $\lambda f\lambda x[x$ likes $f(x)]$
  c. [$_{DP}$ every boy]: $\quad\quad\quad$ $\lambda P\forall x[boy(x) \to P(x)]$
  d. [$_{IP}$ every boy likes _]: $\quad$ $\lambda f[\lambda P\forall x[boy(x) \to P(x)](\lambda x[x$ likes $f(x)])$,
   $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ = $\lambda f\forall x[boy(x) \to x$ likes $f(x)]$
  e. [$_{CP}$ that every boy likes]: $\quad$ $\lambda f\forall x[boy(x) \to x$ likes $f(x)]$, = **RC**
  f. [$_{DP}$ his]: $\quad\quad\quad\quad\quad$ $\lambda R\lambda x{:}male[R(x)]$
  g. [$_{N}$ relative]: $\quad\quad\quad\quad$ $\lambda y\lambda x[x$ is a relative of $y]$
  h. [$_{NP}$ relative of his]: $\quad\quad$ $\lambda y{:}male.\lambda x[x$ is a relative of $y]$, = **R**
   $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ $\leadsto \lambda f \,\forall x{:}DOM(f)[\mathbf{R}(x)(f(x))]$
   $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ = $\lambda f\forall x{:}DOM(f),male$ [$f(x)$ is a relative of x], = **N**
  i. [$_{NP}$ relative of his $\quad\quad\quad$ **RC** $\cap$ **N**
   that every boy likes]: $\quad\quad$ = $\lambda f[\forall x{:}DOM(f),male$ [$f(x)$ is a relative of $x] \wedge$
   $\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad$ $\forall x[boy(x) \to x$ likes $f(x)]]$,
  j. [$_{DP}$ the relative of his $\quad\quad$ $\imath f$ [$\forall x{:}DOM(f),male$ [$f(x)$ is a relative of $x] \wedge$
   that every boy likes]: $\quad\quad\quad$ $\forall x[boy(x) \to x$ likes $f(x)]]$, = **DP**
  k. [$_{NP}$ mother]: $\quad\quad\quad\quad$ $\lambda x[mother(x)]$
  l. [$_{DP}$ his]: $\quad\quad\quad\quad\quad$ $\lambda f\lambda x{:}male[f(x)]$
  m. [$_{DP}$ his mother]: $\quad\quad\quad$ $\lambda x{:}male[mother(x)]$
  n. [$_{CP}$ the relative of his $\quad\quad$ **DP** = $\lambda x{:}male[mother(x)]$
   that every boy likes is his mother]

As detailed below, Grosu & Krifka (2008) have shown that similar interpretative options exist for another type of relative clause, exemplified by sentences like (7), where *gifted mathematician*, though outside of the relative clause, seems to scope under *claims* in the relative clause.

(7) [The *gifted mathematician* [that Bill **claims** to be _]] should have solved this problem.

As evident from these examples, LF interpretation and Surface interpretation propose fundamentally different treatments for reconstruction effects. Which one is to be preferred? Jacobson (2002a, 2004) argues that the steps in the surface interpretation are well motivated, in contrast to certain assumptions of the LF interpretation. She points out that it gets incorrect truth conditions for data like (4), unless the interpretation of the lower copy is substantially modified, in particular, by incorporating variables of the type of functions from individuals to individuals, and by introducing further complications for data with multiple bound pronouns. She shows that there are cases like (8), in which the desired c-command configuration cannot be achieved for all quantifier-pronoun pairs, no matter what syntactic manipulations are adopted, whereas the approach she develops, which crucially does not assume a necessary c-command configuration, can adequately deal with such facts.

(8) The [[assignment [that **every** student$_i$ handed in to *her$_k$*]]
      [that **every** professor$_k$ most praised *him$_i$* for _]]
    is the one he$_i$ handed in to her$_k$ the first week of class.

On the other hand, it is not clear how the operations appealed to in the Surface interpretation approach are restricted and whether they are all independently motivated.

Proponents of LF Interpretation view 'intermediate scope' readings as problematic for Surface Interpretation on the grounds that such readings cannot be achieved by manipulating the logical type of variables (see, e.g., Fox 1999). Such a situation arises when the head NP includes a superlative operator, as in the following example (from Bhatt 2002), where *first* is scope-ambiguous two ways.

(9) The *first book* that John said that Tolstoy wrote __] is *War & Peace*.
    a. 'The first book of which John said that Tolstoy wrote it is *War & Peace.'*
    b. 'John said that the first book that Tolstoy wrote is *War and Peace*.'

Bhatt takes the two readings as evidence for a copy-movement approach that leads to the LF in (10). For semantic interpretation, either the highest (second), or the next (third) copy can be preserved for the semantics, leading to the representations in (11).

(10) [The *first book* [*first book* [that John said [*first book* [that Tolstoy wrote *first book*]]]]]

(11) a. [The *book* x [*first* x [that John said [that Tolstoy wrote x]]]]
     b. [The *book* x [that John said [*first* x [that Tolstoy wrote x]]]]

While such data may appear to be handled straightforwardly by assuming successive cyclic head raising, the treatment Bhatt proposes has to operate with a number of otherwise unmotivated assumptions. Furthermore, while scope ambiguity in this case cannot be handled by type-shifting, there is an alternative preferable analysis by Heycock (2005), who noted restrictions on the generality of the reading in (b) that are not easily accounted for under Bhatt's approach, and who incorporated in her treatment a suggestion by the applicant of this proposal that the parts *John said* and *John said that Mary claimed* can be understood semantically either as embedding clauses, or as evidential markers for the source of knowledge. The evidential interpretation will give rise to an apparently intermediate-scope interpretation of *first* in (b), essentially synonymous with *the first book that Tolstoy wrote, according to John.* This analysis has not only the advantage that there is independent motivation for the evidential construal and that it allows to retain the standard analysis of relative clauses, it also predicts that the narrower-scope readings are not available for factive predicates, which do not lend themselves to an evidential construal, as in *the first book that John regrets that Tolstoy wrote.*

Another type of phenomenon that was interpreted as evidence for reconstruction involve idioms. Data like (12a), as noted in Schachter (1973), may be viewed as requiring the reconstruction if the italicized constituent in the position of the gap, as the chunks of an idiom cannot be interpreted independently of each other, and therefore need to form a syntactic unit in the input to semantics to be interpretable.

(12) [The *headway* that they **made** __ on this project] is impressive.

But data like (13) show that this assumption is incorrect, since the italicized chunk cannot be assumed to occur in the gap position at any level of representation (cf. also McCawley 1983).

(13) [What they **made** __ on this project] constitutes *impressive headway*.

This suggests that idiom-chunks are interpreted in isolation, e.g., by assigning to *make* and *headway* readings essentially synonymous to those of *achieve* and *progress*. Convincing independent arguments for such an analysis have been provided by Nunberg, Sag and Wasow (1994), who distinguish between "idiomatically combining expressions" and "idiom phrases", which are not decomposable into meaningful parts. Syntactic reconstruction analyses predict that movements from idioms are insensitive to that distinction, contrary to fact: Movement from idiom phrases is only possible under a metalinguistic interpretation:

(14) a. *[The *bucket* that Bill's grandmother **kicked** __] is very sad.
      b. [The *bucket* that Bill's grandmother **kicked** __] was the proverbial one,
          not the one in her kitchen.

One task of the project will be to explain why constructions like **achieve headway* are excluded, which can be done by requiring that *headway* receives the meaning 'progress' only as an argument of *make*, by an amalgam of form and meaning requirements that is characteristic for idiomatically combined expressions.

When considering the overall state of the art in the study of reconstruction effects in relative clauses, one is struck by the radically different approaches that have been proposed to deal with them. Also, there is no treatment so far that would consider a wide range of phenomena that might bear on the issue of how to deal with these phenomena, and that would be, at the same time, open to different theoretical approaches to deal with them. What makes a serious comparison of the empirical merits and problems of the two approaches extremely difficult is that the constructions that have been studied in depth with one or the other approach seem to form essentially complementary sets. However, both approaches need to be seriously explored with respect to as many 'reconstruction' cases as possible, if reliable conclusions are to be drawn. This is especially important with respect to Surface interpretation, which has so far been applied to relatively few constructions, so that, despite its arguably conceptually preferred status, it cannot be known in advance how successfully it can be applied to novel data.

An additional problem is that reconstruction effects with relative clauses have not been studied in a wide variety of languages. But there is considerable variation in the configurational properties of relative constructions: some languages employ relative pronouns, others complementizers or relative verb forms; most place relative clauses after their head NP, but some prepose them; many realize the relativized position within the clause by a gap, but some require a resumptive pronoun; and last but not least, sometimes the head NP can be realized within the relative clause itself. Obviously, these variations in syntactic surface structure are potentially relevant for the interpretation of these structures. For example, Grosu (2009b) shows, *contra* Williamson (1987), that the internally-headed relatives of the Siouan language Lakhota need to have their internal NP head interpreted *in situ*. However, the data from Lakhota that are available do not include data with the interpretation of (4). It would thus be of considerable interest to check whether such data exist, and more generally, whether some or all of the various externally-headed relatives with 'reconstruction' effects have synonymous head-internal counterparts in languages like Lakhota.

2.1.3 Scope effects

The second major type of effects concerns so-called circumnominal (Lehmann 1984) or head-internal relative clauses (IHRs) in which the head is related to a determiner or quantifier (D). The facts can be best appreciated by comparing (a) IHRs in which D occurs clause-internally with (b) IHRs in which it occurs clause-externally, and furthermore by comparing (i) IHRs in which D is interpreted clause-internally with (ii) IHRs where it is interpreted clause-externally. One example of

IHRs of type (bii), i.e., with D occurring and interpreted clause externally, is the Siouan language Lakhota (Williamson 1987):

(15)   [$_{DP}$ [$_{CP}$ Mary [$_{NP}$ owįža wa] kağe] ki]
            Mary   quilt   a   make   the
        'the quilt that Mary made'

Williamson proposed that the NP head raises at LF to a position adjoining the relative clause, and is interpreted there by intersection, as in corresponding English relative clauses. That is, the internal head undergoes a process of "exconstruction". Assuming movement to the left (this is arbitrary and may not fit to the OV structure of Lakhota), we get the following input to semantic interpretation:

(16)   [$_{DP}$ [[$_{NP}$ owįža wa] [$_{CP}$ Mary [$_{NP}$ _$_i$] kağe]$_i$] ki]
        THE (λx[quilt(x)] $\wedge$ λx[Mary made x])
        = ιx[Mary made x $\wedge$ quilt(x)]

Williamson's analysis is problematic, as the presumed exconstruction is insensitive to syntactic island constraints (as Williamson herself showed). Furthermore, as alluded to in the preceding section, Grosu (2009b) showed that Williamson's independent arguments for NP raising at LF do not go through, being based on erroneous data. An alternative to NP raising, suggested by Bonneau (1992), envisaged unselective binding by the external Det/Qu of two variables within the relative, one restricted by NP and one restricted by the remainder of the relative.

Another way of dealing with such IHRs that is more in line with the general approach defended here is to assume that the head is interpreted as a restricted identity function that is applied to the transitive verb by function composition, or that the head is interpreted as a restrictor of the transitive verb (cf. (14.a)). This piece of information becomes accessible at the level of the CP, where the definite article *ki* is applied; together with the restriction of the meaning of the CP we get the right result:

(17) a. [$_{NP}$ owįža wa]: λy:quilt [y], or λRλxλy:quilt[R(y)(x)]
      b. [$_V$ kağe]: λyλx[x makes y]
      c. [$_{VP}$ owįža wa kağe]: λx λy:quilt [x makes y]
      d. [$_{CP}$ Mary owįža wa kağe]: λy:quilt [Mary makes y]
      e. [$_D$ ki]: λP ιy[P(y)]
      f. [$_{DP}$ Mary owįža wa kağe ki]: ιy[quilt(y) $\wedge$ Mary makes y]

This shows that a type-lifting, surface compositional interpretation of head-internal relative clauses can be successfully worked out.

Concerning IHRs of type (ai), i.e., with the IH bound by a D that occurs within the relative and is also interpreted there, no earlier analysis seems to have assumed Head Raising. Existing proposals differ, however, concerning the way in which the entire IHR gets interpreted. Importantly, such IHRs differ from all others in having necessarily definite force. One approach, put forward in Hoshi (1995) and Shimoyama (1999) for Japanese and in Kim (2007) for Korean, maintains that the definite force is due to an e-type pronoun in the matrix clause that necessarily takes an IH within the relative as antecedent. On this view, the construction is not a relative construction at all, since the "relative clause" denotes a proposition, not a predicate, and thus functions as a separate clause that introduces a discourse referent, as in the English translation of the following Japanese example (from Shimoyama 1999).

(18) Taro-wa [$_{DP}$[$_{CP}$Yoko-ga reezooko-ni [$_{IH}$ **kukkii-o hotondo**] irete-oita]-no]-o paatii-ni motte itta.

　　　Taro-TOP　　　Yoko-NOM refrigerator-LOC cookie-ACC most　　　put-AUX-no-ACC　party-LOC brought AUX

　　　'Yoko put **most cookies** in the refrigerator and Taro brought *them*
　　　(= all the cookies that Yoko put in the fridge) to the party.'

The boldfaced head denotes a majority of cookies out of a contextually given heap of cookies, and the entire IHR denotes the totality of cookies that Yoko put in the fridge. If *most* had had wide scope, the IHR would have denoted a majority of cookies out of those put in the fridge by Yoko, but this type of interpretation is not available.

Grosu & Landman (2008) and Grosu (2009c,d) argue that the kind of IHRs found in Japanese and Korean should be analyzed as singleton predicates, not as propositions, a state of affairs compatible only with a definite operator. They build on Shimoyama (1999, 2001) and Kim (2007), who proposed that internal heads, in contrast to e-type antecedents in discourse, need to play a thematic role within an event described by a relative-internal clause, but argued *contra* Shimoyama/Kim that the head allows for interpreting the IHR by being equated with a variable that undergoes abstraction and maximalization at the relative clause level, so that the IHR in (18) is essentially interpreted as 'the theme of the maximal event of Yoko putting cookies in the refrigerator'.

In contrast to Japanese/Korean, quantified internal heads in Navajo and in the Cuzco dialect of Quechua seem to take matrix scope (at least insofar as universal quantifiers are concerned), and thus appear to illustrate the (aii) class of IHRs, i.e., with an IH that occurs internally to the relative, but is interpreted externally to it. This can be appreciated by contrasting (18) with the Navajo example in (19), due to Faltz (1998).

(19) [John Bill **t'aa altso chidí** yaa nayiisnii'-ęę] t'éiyá nizhónígo nidaajeeh.

　　　 John Bill all　　　car　from buy-REL　　　 only　well　　　 run

　　　'[All the cars that John bought from Bill] (and only those) run well.'

If (19) were interpreted on the pattern of (18), it would say that John bought all the cars from Bill, and that all those cars run well, when in fact it says that only the cars that John bought from Bill (and which may be four cars out of one thousand cars possessed by Bill) run well. – Partly similar effects are reported by Hastings (2003) with respect to Cuzco Quechua, as the following example shows.

(20) Asunta [Mayta-q plaza-pi **tukuy planta** planta-sqa-n]-ta p'iti-ra-n.

　　　Asunta　　Mayta-GEN plaza-LOC all　　　plant　　plant-NM-3SG-ACC prune-PAST.3SG

　　　'Asunta pruned all the plants that Mayta planted in the plaza.'

Unlike (18), (20) does not say that Mayta planted all the contextually relevant plants in the plaza and that Asunta pruned them, it only says that Asunta pruned those plants that Mayta planted in the plaza, leaving open the possibility that Mayta planted additional plants elsewhere, as well as the possibility that Asunta did not prune such additional plants.

Data like these appear to make a good case for the LF approach if we allow that the IH is brought into a position in which it can be interpreted just as with English relative clauses:

(21) [tukuy$_1$ [planta$_2$ $_3$[Mayta-q plaza-pi [$_1$ _$_2$]$_3$ planta-sqa-n]]]

　　　ALL (λx[plant(x)] $\wedge$ λx[Mayta planted x in the plaza])

But notice that in this case we would have to assume that the determiner *tukuy* 'all' and the NP *planta* 'plant', though forming a DP at base position, move to different positions (indices i, j), and that a relative clause meaning is formed over the gap (index k) – both highly unusual moves. But only in this configuration does it seem possible to conjoin the meaning of *planta* (the noun 'plant') with the proper relative clause meaning such that it can form the restrictor of the relative clause.

Surface interpretation with type lifting of structures like (21) is possible, as the following derivation shows:

(22) a. [$_{NP}$ planta]: $\lambda y[\text{plant}(y)]$
b. [$_D$ tukuy]:   standard: $\lambda P'\lambda P\forall y[P'(y) \to P(y)]$
                      here: $\lambda P'\lambda R\lambda x\lambda P\forall y[[P'(y) \wedge R(y)(x)] \to P(y)]$
c. [$_{DP}$ tukuy planta]: $\lambda R\lambda x\lambda P\forall y[[\text{plant}(y) \wedge R(y)(x)] \to P(y)]$
d. [$_V$ planta-]: $\lambda y\lambda x[x \text{ plants } y]$
e. [$_{VP}$ tukuy planta planta-]: $\lambda x\lambda P\forall y[[\text{plant}(y) \wedge x \text{ plants } y] \to P(y)]$
f. [$_{CP}$ Mayta-q tukuy planta planta-]: $\lambda P\forall y[[\text{plant}(y) \wedge \text{Mayta plants } y] \to P(y)]$
g. [$_{DP}$ Mayta-q tukuy planta planta- ta]: $\lambda R\lambda x\forall y[[\text{plant}(y) \wedge \text{Mayta plants } y] \to R(y)(x)]$
h. [$_V$ p'iti-]: $\lambda y\lambda x[x \text{ prunes } y]$
i. [$_{VP}$ [Mayta-q tukuy planta planta-]-ta p'iti-]: $\lambda x\forall y[[\text{plant}(y) \wedge \text{Mayta plants } y] \to x \text{ prunes } y]$
j. [$_{CP}$ Asunta-q [Mayta-q tukuy planta planta-]-ta p'iti]: $\forall y[[\text{plant}(y) \wedge \text{Mayta plants } y] \to \text{Asunta prunes } y]$

The crucial step is the type lifting of the quantificational determiner *tukuy* in (b) to a meaning that combines the NP it applies to and the clause it occurs in to a restrictor such that we arrive at a quantifier meaning for the relative clause (cf. f, the lifting to an object quantifier meaning necessitated by the accusative suffix *–ta* is standard). However, type lifts as in (b) were not proposed so far, and it would have to be worked out whether they can be derived from general principles.

The case of Navajo is of special importance, because the literature (in particular, Platero 1974) indicates that the IH may be placed arbitrarily deep within the relative, as shown in (23), so long as island constraints are respected, as shown by the deviance of (24), due to Platero, where Subjacency is violated. The importance of the Navajo data derives from the fact that the IHRs of Cuzco Quechua, which, as noted above, have similar semantics, do not seem to allow unbounded dependencies (Hastings 2004).

(23) [**Chidí** dilwo' nisin ní-(n)ę́ę́] yícho'.
    car   fast   think tell-REL   ruin
'The car he said he thought wsas fast is broken down.'

(24) *[[*Hastiin* **łééchąą'í** bishxash-ę́ę́] be'eldooh néidiitą-(n)ę́ę́] nahał'in.
    man   dog   bite-REL   gun   pick-up-REL   bark
'*The dog that the man who was bitten by (it) picked up the gun is barking.'

The facts in (19), (23) and (24) can be explained in the LF-movement approach by assuming that the IH is covertly raised cyclically (a step that accounts for unboundedness and island sensitivity), and gets interpreted in its raised position (thereby accounting for its matrix scope). At the same time, it is possible to formulate an analysis that does not appeal to covert raising. This avenue is worth exploring, in view of its conceptually preferred status and of its empirical success in relation to other data.

2.1.4 Desiderata

I have indicated above the currently existing approaches to two kinds of phenomena concerning relative clauses, (a) phenomena where the head of the relative clause, though external in surface structure, appears to have an internal reading, and (b) phenomena where the head of the relative clause, though internal of surface structure, appears to have an external reading. While this seems to call for a head-raising analysis of relative clauses as first proposed in Vergnaud (1974) and in

Kayne (1994), I have argued that an LF movement account has problems, and tried to motivate that theoretical alternatives, in particular a surface-interpretation approach using type lifting, should be sought, and compared with the LF movement accounts. At the same time, it became clear that the empirical claims are fairly complex, and even though our knowledge of subtleties e.g. of internally headed relative clauses has increased, much empirical research is still necessary.

2.2 Eigene Vorarbeiten / Preliminary work

This project was conceived of in previous work and in intensive discussions with Alexander Grosu, professor emeritus of Tel Aviv University, who would play an important role in carrying out the research agenda. For this reason I take the liberty to present the work of Grosu that is relevant for the present research here as well.

We think we are well positioned for the type of research proposed here, for the following reasons: First, our expertise is in the two fields most relevant for this project, namely syntax (Grosu) and semantics (Krifka), with a strong shared interest in the syntax/semantics interface. Second, we have both worked extensively on semantic phenomena that exhibit reconstruction effects, where we did assume actual syntactic reconstruction (see Grosu 2000, Grosu & Landman 1998, Krifka 1998). Third, our joint work on the construction in (7) has convinced us that Surface Interpretation has considerable descriptive and explanatory potential, and we are eager to investigate its potential with respect to scope phenomena as well. We are thus very interested in seeing this project carried through, in the hope of learning more about the capabilities of the two approaches, and about the implications of our expected results for the syntax-semantics interface.

In relation to reconstruction effects, in Grosu & Krifka (2008) we addressed a phenomenon that we called Equational Intensional 'Reconstruction' Relatives (EIR Relatives), which, to our knowledge, had not been analyzed in detail within any framework; this is illustrated in (7) above and (25) below.

(25)   [The *brave fighter* that **each** of you **undoubtedly** is _] will hopefully do his utmost
       to defend the fatherland.

Our solution follows structurally the technique utilized by Sharvit and Jacobson in relation to relative clauses with functional heads like (4). In essence, the head noun, *gifted mathematician* in (7), is not interpreted as a property of individuals as usual, but as a property of individual concepts, type $\langle s,e \rangle$. These functions satisfy the same role as the functions f in (4). They enable a meaning assignment as if the modal operator within the relative clause had scope over the head, where as a matter of fact the relative clause and the head NP are just combined conjunctively. We have not argued in detail against a possible analysis in terms of LF movement (reconstruction) in that paper, but as a matter of fact, we are aware of several problems of the LF movement account, and would spell them out in the course of the current project.

In addition to this joint article, each of us has done individual work on topics relevant to the present project proposal.

The work of Krifka, as far as it concerned the syntax/semantics interface, has concentrated mainly on the role of focus for focus-sensitive constructions. This is higly relevant for considering how semantic interpretation works, as focus-sensitive operators need to be informed about the focus that may be embedded within a constitutent, as illustrated in (26):

(26)   a. Mary only [introduced $BILL_F$ to Sue].
       b. Mary only [introduced Bill to SUE_F].

Krifka (1992) is a widely-cited approach combining categorial grammar with structured meanings (von Stechow 1990) to focus sensitivity that is able to deal with cases of multiple focus without syntactic movement. In later work, Krifka has compared the particularly restrictive framework of classical Alternative Semantics (Rooth 1985, Rooth 1992) with the more articulated Structured Meaning approach, pointing out a number of problematic constructions for the first (cf. Krifka 2001, 2004, 2007). Type lifting has played a major role in a number of works on a variety of topics, e.g. on non-Boolean conjunction (Krifka 1990), on speech-act conjunction (Krifka 2001b) and the interpretation of generic sentences (Krifka 2004b). Krifka was also involved as referee in Jäger (2005), a Habilitationsschrift that is a major contribution to type-logical grammars. Krifka (2009) uses the notion of predicates over individual concepts, as a type-lifted version of a regular predicates that was crucial for Grosu & Krifka (2008), for formerly unnoticed

Alexander Grosu has a number of publications that concern reconstruction effects, the analysis of various types of internally-headed relative clause constructions, and degree relatives attested so far in Romanian and Albanian. Concerning reconstruction effects, an LF approach was adopted in Grosu & Landman (1998) for so called "amount relatives" as in (27), where the gap, if taken to be an entity variable as suggested by the head *the three books*, cannot be bound by the existential quantifier represented by *there*-construction.

(27)   [The three books that there were __ on the desk] seem to have disappeared.

Grosu & Landman proposed a head-raising analysis that had the noun *books* interpreted in the gap, with abstraction applying to a variable over ordered pairs of degrees and entities. This general idea could also be implemented by means of Surface interpretation, specifically, by assuming that the entity in the ordered pair is restricted by a property variable, which gets abstracted over and intersected with the external NP. Such an approach might in fact have an advantages over the LF approach, because the latter, but not the former, may face a problem analogous to the problem raised by the LF analysis of EIR relatives like (7) and (25). Thus, amount relatives may also be EIR relatives (with a *concealed* equational statement, something possible independently of amount constructions), as illustrated by (28) (in a context where 'you' claim that a certain member of the department is a great mathematician, and 'I' am skeptical). If Surface interpretation is preferred for EIRs in general (for reasons noted above), then data like (28) suggest it ought to be preferred for amount relatives as well.

(28)   [The great mathematician that you claim there is __ in this department] should have
         solved this easy problem with greater ease.

In Grosu (2000a), Grosu investigated the **syntactic** manipulations necessitated by an LF *cum* head-raising approach to data like (27).

Grosu has worked extensively on the otherwise little-known internally-headed relative clauses. Grosu (1994, section 2.4) proposed (as far as we know, for the first time in the literature) that these constructions are not semantically uniform in the languages of the world, and that Lakhota and Japanese IHRs have restrictive and definite semantics respectively (earlier works typically assumed uniform semantics for IHRs; see, e.g., Cole 1987). This idea was developed in more detail in Grosu (2000b). -- In Grosu (2009b), a tripartite typology of IHRs is presented and discussed, with emphasis on the fact that Navajo illustrates a type distinct from both Lakhota and Japanese in that the overt position and the semantic scope of the IH do not match. -- In Grosu (2009c,d), the analysis of Japanese/Korean IHRs is significantly updated in the light of recent work on the semantics and pragmatics of these constructions (in particular, Kim 2007), and a more detailed formal analysis of these construction is currently in preparation by Grosu and Fred Landman, as a revision of a submission to the *Journal of East Asian Semantics*.

For the project, I apply for one full position for a researcher, with a person in mind who has (a) expertise in syntax, semantics and the syntax/semantics interface, and (b) who has experience in doing syntactic and semantic field work. This position should be offered to Mathias Schenner. Schenner's two *Diplomarbeiten* in Philosophy and Linguistics concern semantics (quantification and presupposition) and syntax (scrambling and genericity in German). Schenner has worked, from 2005 to 2009, within the project *CHLaSC* (Characterizing Human Language by Structural Complexity), funded by the EU Commission and directed by Uli Sauerland and Manfred Krifka. In this project he has worked on evidentials in a variety of languages, in particular on evidentials in embedded sentences. He has done field work on a number of languages, including Bulgarian, Turkish, and Pirahã (Schenner 2009a, b, Sauerland & Schenner 2007). His dissertation on this topic, at Humboldt Universität, which I direct, is scheduled to be finished and defended in 2010. For the academic year 2009/2010 Schenner teaches at Humboldt Universität.

In addition to that, I apply for a student assistant (Studentische Hilfskraft). This will be necessary in particular for surveying the literature, preparation of publications, and preparations of the workshops.

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3. Objectives and work schedule (Ziele und Arbeitsprogram)

3.1 Objectives (Ziele)

The project has three kinds of objectives.

(A) It will investigate two kinds of apparent syntax/semantics mismatches in the interpretation of relative clauses, namely (i) apparent reconstruction effects and (ii) apparent exconstruction effects with respect to relative clauses and their heads. While our state of knowledge has increased concerning these phenomena, there is still much to be investigated, in particular concerning internally-headed relative clauses which come in various sub-types, and are often represented in languages that are not easily accessible. Languages that should be studied directly or with collaborators include Japanese, Korean, Lakhota, Quechua and Navaho.

(B) It will model these phenomena within different theoretical frameworks, in particular (a) theories that work with a notion of Logical Form (LF) that include pre-minimalist and minimalist versions of Generative Grammar, and (b) theories that do not assume special syntactic representation levels for the purpose of semantic interpretations, but only interpret structures for which there is direct syntactic (e.g., distributional) evidence, and among them mainly those theories that assume type lifting and flexible combinations of meanings. As usual, attempts at theoretical descriptions will feed back to the kind of data that we will try to observe (goal A).

(C) The overall goal is to assess the naturalness in which the empirical observation can be captured by the different theoretical approaches. This includes a critical review of the various assumptions necessary for the description of particular phenomena, of the generality or parochialness of these assumptions, and of their motivation on empirical and conceptual grounds. In this respect, data from phenomena outside of the area of relative clauses, to which the project confines itself in its empirical research for reasons of practicality, will have to be considered as well.

We plan to disseminate the results in various forms: (a) several specialized publications in high-ranking journals; (b) one or two collections of articles orginating from the planned workshops; (c) a monograph on the phenomena concerning relative clauses and the larger issue of the architecture of the syntax/semantics interface that should be accessible for both syntaciticians and semanticists.

As stated in the preceding section, our understanding of the architecture of the interaction of syntax and semantics is both of great importance for linguistic theory, and in a deplorable state in current linguistic practice. While we admit that the construction of linguistic theories is not necessarily as constrained by recognized facts as in some other fields of study, e.g., in the natural sciences, we believe that the current schism concerning this issue is unnecessary, and we will try to help overcome it by a systematic and even-handed analysis of linguistic phenomena, and a study of what linguistic theories of various types have said, or could say, about them. This means that we expect our work to have significant implications beyond the mere issue of the reconstruction and scope effects we set out to investigate and analyze. If successful, it may help shift the linguistic community working on syntax and semantics towards the framework of LF interpretation or towards the framework of Surface interpretation.

We propose to conduct our study by analyzing various types of examples within the framework of LF interpretation, taking note of existing analyses, and also within the framework of Surface interpretation. We will attempt to deviate minimally, and only when necessary, from the kinds of machinery that have already proven successful in a number of cases. In so doing, we will also try to elucidate aspects not yet addressed in constructions already studied, e.g., the fact that the equational part of EIR relatives may be present only in the semantics, but not in the syntax, cf. Grosu & Krifka 2008). We hope that our results will substantially improve our understanding of reconstruction and scope effects in the languages of the world and will ultimately lead to a theory of these phenomena that is unified precisely to the right extent. We also hope that our results, like any significant results in theoretical linguistics, will have valuable implications for the fields of brain and language, language acquisition, natural language processing, and machine learning.

3.2 Work schedule (Arbeitsprogramm)

The work schedule is conveniently divided into six units of half a year each. "Researcher" refers to the Researcher to be hired (Mathias Schenner).

<u>First Half Year</u>

The Researcher surveys the literature on reconstruction phenomena in depth, in particular with relative clauses, taking into account both the empirical findings and the theoretical proposals,

which should be systematically classified, already with view on the monograph publication. The Researcher identifies phenomena that need further study, and systematically tests reconstruction phenomena in typologically distinct languages (so far, reconstruction has been studied for very few languages).

The Researcher identifies specific versions of the treatment of scope-taking behavior, identifying their particular claims and theoretical possibilities. The global claims of LF interpretation and Surface interpretation are known, but there is a considerable number of details in which specific proposals differ. In particular, the Researcher will identify the specific properties and motiviations of operations that relate to scope-taking and reconstruction in the various theoretical approaches (e.g. classical, economy-driven and minimalist versions of Generative Grammar, approchaes in classical categorial grammar, combinatorial and type-logical grammars).

The Researcher starts to give model descriptions of various kinds of reconstruction phenomena in the various theoretical account.

The Researcher is assisted in this by Grosu, with an intended research stay in Berlin of 4 weeks. Krifka will most likely have a research semester at this point, but his main occupation will be in linguistic fieldwork on Melanesian languages (which he will also investigate with respect to reconstruction and head-internal relative clauses) and in activities related to the SFB 632 "Information structure".

Second Half Year

The Researcher continues studying particular reconstruction phenomena and their description in different theoretical frameworks, taking into account the consequences that particular decisions will have in other parts of grammar.

A first workshop is organized during the second or third half year on the topic of reconstruction phenomena and their grammatical description. The goal is to bring together experts on these phenomena with research background on different languages, using different theoretical approaches. I would like to invite 6 speakers and have slots for 10 additional speakers, and there should be space for a panel discussion. As the topic of the workshop is very coherent thematically, it is likely that I will be able to attract the interest of a publisher for a proceedings volume on this topic.

The Researcher starts an in-depth survey of the various types of head-internal relative clauses, in particular, the scopal phenomena of their internal head in case this is a quantificational expression. The researcher identifies specialists on particular languages with head-internal relative clauses that are willing to assist with specific research questions (a model of research that is well established at ZAS). The researcher is assisted in the latter goal by Grosu, with an intended research stay of 4 weeks in Berlin.

Third Half Year

The workshop on reconstruction may be held at this time (see above). In any case, the results of the workshop are taken into account in the general description of reconstruction phenomena, and a publication concerning the results of the workshop, and perhaps additional work, is prepared.

The Researcher continues work on the topic of reconstruction for the monograph (see above).

The main focus is put increasingly on the topic of head-internal relative clauses. The general survey is continued. Active working relations with specialist researchers have been established or are being established. We intend, particularly during or close to the third half year, to carry out a number of special assignments to language specialists to investigate properties of head-internal relative clauses systematically. The Researcher plans for one or two shorter field work activities, possibly on Quechua, Navaho and/or Lakhota. The final decision on the languages will depend on the results of the survey and on the working relationship with language experts.

We have contacted already a number of researchers, including Dr. habil. Regine Pustet (Munich) and Prof. Robert Van Valin (Düsseldorf) on Lakhota, Paul Platoro Ph.D. on Navajo, and Prof. Rachel Hastings (Olympia, WA) and Prof. Martina Faller (Manchester) on Quechua. As we need relatively specific data, we plan to involve language experts to investigate specific aspects of their languages for us.

As before, the Researcher will be assisted by Grosu with a research stay of 4 weeks. Grosu should also be supported for a shorter field work session with one of the language experts.

Fourth Half Year

Work on reconstruction phenomena is continued, but not with main focus. We intend to prepare the workshop publication around this time, with the help of the student assistant. Work on the reconstruction part of the monograph continues and should come to a close. Results of this part of the project should be presented at a major lingusitics conference, and a journal publication on the topic should be prepared.

The Researcher focuses more on the topic of Internally-headed relative clauses. As before, the descriptive and explanative power of various theoretical options is investigated, with the view of including a discussion in the monograph.

The second workshop is being prepared on the topic of head-internal relative clauses and their interpretation. We intend to invite about 8 guest speakers, and have competitive slots for about 10 more. The selection of the guest speakers and the call for papers will be quite specific, with a number of particular research questions that are of main interest to us (it will have been sent out already during the Third Half Year). The workshop itself is either held in this period, or immediately afterwards.

The Researcher will be assisted by Grosu with a research stay of 4 weeks that includes the workshop itself.

Fifth Half Year

A publication is prepared on the results of the second workshop. Currently, there is no major collective publication on head-internal relative clauses; I am certain that a high-ranking publisher will show interest in publishing this thematically coherent collection of articles.

The Researcher continues work on the monograph, especially on head-internal relative clauses and different theoretical approaches to their description. At this time there will also be occasions to present the results at major conferences.

The Researcher will be assisted by Grosu with a research stay of 4 weeks.

Sixth Half Year

In the closing of the project, the monograph is prepared for publication, if possible at the beginning of the period so that reviewers' comments can still be taken into account within the running time of the project. There will also be occasions to present results at workshops and conferences.