INTER-THEORETICAL APPROACHES TO COMPLEX VERB CONSTRUCTIONS: POSITION PAPER

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1. INTRODUCTION AND ADMIN

This document is a position paper (in the loosest sense of the word) for the Eleventh Biennial Rice University Linguistics Symposium, to be held at Rice's campus from March 16th–18th, 2006.

While I do not wish to provide too restrictive a set of guidelines for the talks in the symposium, I would like to outline some of the background to the topic and to raise some nagging issues in the study of complex predicates. This (pseudo)position paper gives the rationale for the symposium topic, outlines the state of the art and the issues at present and provides suggestions for some directions which I hope participants at the symposium will pursue. It will also (with revisions) form the introduction to the published proceedings of the symposium and will thereby act as a framework for discussion of the individual papers. For most of the sections I am not explicitly arguing for a particular analysis and I would welcome discussion and disagreement about any of the issues summarized here!¹

We have had some interest from Oxford University Press in publishing a volume based on the workshop and I will pursue this over the coming months and hope to have more information for you in March.

If you would like to precirculate your paper I can arrange this (although it's not necessary) – it would be easiest if you email it to my and I will circulate it.

Date: January, 2006.

¹I should also add the caveat that this position paper is somewhat weighted towards light verb constructions because that is the type of complex predicate most common in the languages I know best. It is also in need of thorough proof-reading and restructuring, but I am likely to have time to do that before the symposium.

We will have a data projector in the conference room and an overhead projector can be arranged. There is also a blackboard in the room we will be using. It would be helpful if I could have a title and abstract by the middle of February.

2. The rationale for the symposium

The purpose of the workshop is to bring together those working on different types of complex predicates in different languages in order to discuss problematic issues, possible typologies, pathways of grammaticalization, and the merits of different approaches and analyses. To this end, participants in the symposium are specialists in different languages and families, and work in different syntactic frameworks. Current confirmed participants are (in alphabetical order, with a topic where you've already told me what you're talking about):

Name	Affiliation	Topic
Adams Bodomo	U Hong Kong	
Claire Bowern	Rice	opening remarks, Australian
		complex predicates
Andrew Garrett	UC Berkeley	
T. Givón	U Oregon	
Alice Harris	SUNY Stony Brook	
Martin Hilpert & Chris-	Rice	grammaticalization of motion
tian Koops		verbs in Scandinavian languages
Peter Hook & Prashant	U Michigan &	historical stability of light verbs
Pardeshi	Kobe U	in Indic
Simin Karimi	U Arizona	
Andrew Pawley	ANU	closed verb classes/Kalam com-
		plex preds
Kingkarn Thepkanjana	Chulalongkorn U	
Keren Rice	U Toronto	Athapaskan root structure +
		word classes of certain incorpo-
		rated elements
Eva Schultze-Berndt	Karl-Franzens-	
	Universität	
Masayoshi Shibatani	Rice	Japanese and Korean serializa-
		tion and complex predication

In addition to the invited talks, there will be a poster session, organized by the Rice Linguistics Society (RLS).

Complex verb constructions are found in many of the world's languages. We now have the beginnings of a typology of such constructions, ranging from the different types of serial verbs (in, for example, the isolating languages of East and Southeast Asia and the languages of Oceania and West Africa) to the light verbs of the languages of Asia, as well as the bipartite verbal systems of Australia and converbal complex predication in Japanese, Korean, and Turkic. Work has been progressing on studies of complex verbs from several different theoretical perspectives but so far there has been little attempt to draw together those working on different language families and in contrastive frameworks. With work in this area now flourishing, it is a good opportunity to take stock of the various phenomena which come under the label of "complex predicates", to see whether extent the current stock of varying analyses are notational equivalences or actually represent fundamentally different constructions.

3. Definitions and Previous Research

Many superficially rather different constructions have been labeled 'complex predicates' at various times:

- Serial verb constructions in the languages of West Africa, Oceania and Asia
 - switch-subject serialization (in particular Bradshaw 1993, 1999)
 - core/nuclear serialization (see, for example Crowley 2002)
 - for a few references see Bradshaw (1993, 1999), Bril (2002), Crowley (2002), Durie (1997), Pawley and Lane (1998) for Oceania and Papua New Guinea, Ameka (nd), Eaton (nd), Lord (1993), Sebba (1987), Stahlke (1970) for Africa, for South America, Aikhenvald (1999), Andrews (1997) and Aikhenvald (forthcoming), Foley and Olson (1976), Newmeyer (2004) for more general discussion.
- Raising verbs and restructuring predicates, particularly in Germanic and Romance (amongst many onthers, Alsina 1997, Di Sciullo and Rosen 1990, Samek-Lodovici 2003, Wurmbrand 2001); perhaps the same analysis also applies to some types of 'serialization' in Tariana (Aikhenvald 2003).
- Light verb constructions comprising a preverb/converb/coverb + 'light verb'
 - Hindi/Urdu (Butt 1995, 1997, Butt and Geuder 2001, Hook 1974, Mohanan 1994)
 - Farsi/Persian (Folli et al. 2003, Ghomeshi 1996, Goldberg 1996)

- Central Asian Turkic and Turkish (Anderson 2003, Bowern 2004b, Oztürk 2005, Schonig 1976)
- Northern Australian languages (Bowern 2004a, Nash 1982, Schultze-Berndt 2001, Wilson 1999); McGregor (2002) deals with the same construction, although he argues that it is not a complex predicate.
- Japanese suru constructions (Grimshaw and Mester 1988, Matsumoto 1996)
- Japanese -te constructions (Matsumoto 1996), Shibatani.
- Abstract finals and bipartite verb stems, particularly in Algonquian (Quinn 2006) and Algic (Garrett 2004a) and Athapaskan (Rice 2000)
- some verbal classifier constructions (e.g. in Signed Languages, cf. Benedicto *et al.* forthcoming)
- perhaps also **pseudo-incorporation** (Massam 2001)
- some types of incorporation (e.g. **preposition incorporation** (Baker 1988, Garrett 1990) and **particle verbs**, for which there is a huge literature)
- secondary predication (for example, Rosen 1997)

All of these types of predicate could be said to be complex in the sense that the predicate structure (or event structure) is determined by more than one element. However, it is not immediately clear that there is more common to these constructions than this.

Question: Do these different constructions share more in common than the fact that they involve complex predication?

3.1. Definitions of complex predicates. I follow Butt and Geuder (2001:325) and Alsina *et al.* (1997:1) in treating complex predicates as structures where each component of the complex predicate contributes to the predicate information normally associated with a head. Particularly relevant here is are cases where argument structure and theta-role assignment appears to be determined simultaneously by more than one element in the clause, or where there are difficulties in identifying the head of the predicate. For example, in Bardi light verb constructions, the coverb and the inflecting verb jointly determine argument structure. In Turkic complex predicates, the coverb determines the argument structure of the predicate, but the inflecting verb is structurally the head of the predicate (it carries finite inflection, for example, and appears in the same position as the head of simplex predicates).

The definition which Butt (1995:2) provides for complex predicates is given below:

- (1) a. complex predicates are multi-headed; argument structure is complex;
 - b. they are composed of more than one grammatical element, each of which contributes part of the information normally associated with a head;
 - c. their grammatical functional structure, however is that of a simple predicate;
 - d. light verb structures can be formed lexically or syntactically.

Thus complex predicates are 'complex' because they consist of two (or more) constituents which do the work of a single verbal predicate; the functions of the predicate are spread across multiple constituents.

Aikhenvald (forthcoming:6,iii) distinguishes complex predicates from serial verbs and argues in passing that multiple types of multi-verbal constructions can be distinguished for individual languages. However, it is not clear exactly what she classes as complex predicates (as opposed to serial verb constructions). In Appendix II, for example, she mentions modals and passives as complex predicates in Tariana (see also Aikhenvald 2003).

The broadest definition of complex predication which involves multi-headedness could potentially capture a larger number of predicate types.

3.2. Serial verbs. Definitions of serial verb constructions are along the same lines as those for complex predicates in general.

A serial verb construction is a sequence of verbs which act together as a single predicate, without any overt marker of coordination, subordination or syntactic dependency of any other sort. Serial verbs describe what can be conceptualized as a single event. They are monoclausal; their intonational properties are those of a monoverbal clause, and they have just one tense, aspect and polarity value.

Aikhenvald (forthcoming:1)

Sebba (1987:39) has a somewhat similar definition (based on Kru languages); both he and Crowley (2002:12) define serialization in terms of four parameters:

- (1) both verbals must be fully lexical verbs in their own right
- (2) they must mark the same event, or if they may refer to different events, must have the same values for tense, aspect and mood

- (3) they must be members of the same clause
- (4) there must be no conjunction (or, according to Crowley, no possibility of conjunction) separating them.

Notice that this definition is not couched in terms of argument structure or headedness (except, perhaps, as implied in the notion of "fully lexical").

The grammaticalization of serial verb (and related) constructions has received some attention in the literature. Recently we find several hypotheses which derive grammaticalisation effects from frequency, most notably, of course, in the work of Joan Bybee and allied proponents of "usage-based" models of language and linguistic change (Bybee 2005, Bybee and Hopper 2001, Hopper and Traugott 2003, Traugott 2003:see for example). See below in §5 for further discussion of some of these issues.

There are numerous issues in the treatment of serial verb constructions, of course, and some that may get an airing in this symposium are:

- **Headedness:** Can we identify one verb as the head of the clause in serial verb constructions? What are the problems inherent in doing so in the different types of serial verb constructions?
- **Constituency:** particularly in the area of VP structure. Related to this of course too is the extent to which different types of serial construction (which are usually categorized in terms of constituency and adjacency of the verbs) are correlated with other questions of constituency in the languages in question.
- **Argument sharing:** and argument projection, in particular in relation to theta role assignment.
- **Event status:** How robust is the criterion that serial verbs constitute a single event? How do we test it? (For a discussion in relation to Sandawe see Eaton nd)
- **Compounding:** and the differences between compounding and verb serialization (see e.g. Nishiyama 1998).
- **Productivity:** Serial verbs are productive; part of the definition is that any two lexical verbs may enter into such a construction as long as they can be construed as comprising a single event.
- **Historical change:** Are serial verbs the source of other types of complex predicates? How have they developed in the modern languages for which we have data? Is it always through the reanalysis of parataxis?

Grammaticalization: How does bleaching of paratactic constructions take place (assuming that this is the source of serialization)? What precise role does frequency play?

3.3. Light verbs. In addition to serial verbs, we find a large class of complex predicate which have the structure of X plus a "light verb" (the term is originally due to Jespersen 1954/1909). These complex predicates are particularly common in South Asian (among Turkic, Indic and Iranian languages) as well as in Northern Australia and some parts of Papua New Guinea.

3.3.1. Definitions and argument structure. Formal definitions of the X + Verb type of complex predicate, especially in the Government and Binding literature, revolve around the definition of a light verb. For example, Grimshaw and Mester (1988) describe the Japanese light verb suru 'do' as a verb with an empty argument structure which assigns accusative case but no θ -roles:²

(2) suru, V; () < acc >

As a result, Grimshaw and Mester (1988) define two typical properties for light verbs: they are semantically deficient or 'light', in that they contribute semantics to the clause which are not very specific, and they are frequently either phonologically null or (if they are overt) as act merely as a host for agreement and tense morphology. Similar definitions are followed by many other researchers (e.g. Lin 2001).

Di Sciullo and Rosen (1990:109) have a different representation of 'semi-light' (= restructuring) verbs in Italian, one that is followed by Samek-Lodovici 2003. These verbs are assumed to have a fully specified external argument structure, but an unspecified internal argument variable. Thus *volare* is specified as taking two arguments, but the structure of the arguments themselves are not further specified.

Question: Do light verbs in different languages have different degrees of specification of their argument structure?

The simple answer to this question is clearly 'yes', since some languages exhibit valency restrictions in light verb use, while others do not. It is also conceivable that

²Although note that the light verb use of *suru* contrasts with a full verb use, where θ -roles *are* assigned.

within the same language there are differences in different light verbs, although this has not been discussed to my knowledge.³

3.3.2. *Semantics*. Light verbs have rather similar semantics across different languages. Typically when a language has only one light verb it is 'do' or 'make'; other verbs that tend to participate in such constructions include:

- (3) a. motion verbs such as 'go' or 'come'
 - b. verbs of impact such as 'hit' or 'spear'
 - c. 'give'
 - d. verbs of trajectory such as 'catch' or 'fall'
 - e. psych verbs and verbs of volition such as 'think', 'want' and 'try'

Question: To what extent do the similar lists of light verbs in different languages reflect something about the semantics of such verbs or universal grammaticalisation patterns (perhaps involving frequency)? Are there other reasons why such verbs are so common in lists of light verbs?

Butt's (1995) proposal is that functionally, light verbs provide further information about the structure of the event. As such, it would make sense that the types of verbs recruited as light verbs would be those that would be bleached to provide particular information about event structure, such as duration or telicity. One could probably also make an argument that a verb such as 'cut' has a more general semantics than a verb like 'dismember', and so might be more susceptible to reanalysis (this argument is very easily circular, though, so I'm not going to push it).

On the basis of a study of Turkic complex predicates (and confirmed informally by what I know about Australian languages), it seems that light verbs in these constructions limit events in specific ways. To be precise, they provide four types of information:

- (4) a. **Internal event structure:** The light verb gives additional information about the internal structure of the event denoted by the coverb.
 - b. **Trajectory**: The light verb marks associated motion (the term is due to Koch (1984), the path of the action/event denoted by the coverb (see also Simpson 2001).

³An obvious candidate for such a language would be Uzbek.

- c. **Quasi-modal** information. The light verb encodes modal information about the event.⁴
- d. **Participant information:** The light verb provides information about the theta role of clause participants and in some cases adds a theta-role to the argument structure of the predicate.

Question: Is this claim contradicted anywhere?

3.4. The preverb.

3.4.1. *Preverb sources.* While light verbs are rather homogeneous across languages, coming from similar lexical sources and displaying similar properties,⁵ the class of preverbs is considerably more diverse. In the northern Australian language Bardi, for example, members of any word class apart from an inflecting verb may be a preverb. Examples are given in (5).

(5) a. Preverbs without cognates in other word classes:

roowil -(i)nya- 'walk'; marl -joo- 'stop'

b. Nouns

girringg 'a cough'; girringg -ar- 'to cough'; anggoorr 'tears'; anggoorr -ma- 'to mourn for someone'

c. Adjectives

ngaada 'short'; ngaada -joogooloo- 'to break in half'; rambin 'heavy'; rambin -joo- 'feel heavy'

d. Adverbs

angan 'closeby'; angan -ganyi- 'to come up close'; bard 'away'; bard -ga- 'take across'

⁴I call it quasi-modal since light verbs and modal verbs/particles are not the same.

⁵For example, the same verbs are commonly implicated in light verb constructions crosslinguistically. Translation equivalents of 'give', 'take', 'do', 'put', 'sit' and 'fall' are some of the most frequent.

e. Loans from other languages

boojoom 'push 'im' (Kriol); boojoom -ma- 'to push off (a boat)'; warrgam 'work 'im' (Kriol); warrgam -joo- 'to work';

Question: What are the most common sources of coverbs?

In some other, more familiar languages, lexical verbs may also be used as preverbs and the constructions are productively formed. In almost all Turkic languages,⁶ for example, a gerund or participle combines with one of a limited set of inflecting verbs to form a complex predicate. An example from Turkmen is given in (6):

(6) Ali kitabi okuy<u>up</u> turdu.
A. book-ACC read-GER 'stand'-PST.
'Ali kept on reading a book.'

Here the finite verb is tur- 'stand', which takes tense inflection. The main θ -role assigning verb, however, is oku- 'read'; this verb subcategorizes for kitabi 'book-ACC', for example. In such cases, the primary lexical meaning of the predicate comes from the gerund, and tense/aspect information and agreement is marked on the finite verb.

3.4.2. Productivity and extent of such constructions. The best functional description of this type of light verb construction involves verb classification. The light verb acts as a classifier of the gerund/participle and provides further information about its event structure. In Turkish, such constructions are productively formed in syntax with *durmak* 'stand, stop'. Uzbek's syntax is similar, although the number of regularly used light verbs is much greater (more than 20) and the possible constructions seem more idiosyncratic and lexicalized.⁷ Some examples are given in (7) and (8) below (from Gulnora Aminova, pers. comm.).

(7) a. Qush uchip ketib qoldi.
bird fly-IB come-IB remain-3.PST
'The bird flew away [unexpectedly].'

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 $^{^6\}mathrm{The}$ only Turkic language I know of which lacks the -ib morpheme (and this construction) is Yakuts.

⁷These constructions are not usually described as complex predicates in the literature, although as shown in Bowern (2004b) the relevant tests clearly show their status. Other descriptions of Turkic light verbs, *Hilfsverben* or 'auxiliaries' include von Gabain (1945), Schönig (1984) and Schamiloglu (1996).

- b. * Qush uchip qolib ketdi. bird fly-IB remain-IB come-3.PST
- (8) Bu kitobni o'q<u>ib</u> bor<u>ar</u> <u>ekanman</u>, khayolim boshqa this book-ACC read-IB go-PART sow-1SG mind-1SG.POSS'R other joyda edi. place-LOC be-3PST

'I was reading this book, but my mind was somewhere else.'

Such constructions are extremely frequent in Uzbek and are formed productively. This is not true of all languages with such constructions, however; in Bardi, for example, productivity appears to be limited to a few light verbs (including *-joo-*'do/say') and to the assimilation of loaned verbs from English and Kriol. Complex predicates co-exist with inflecting simple predicates.

Complex predicates of this type are a feature of a broad area covering South and Central Asia; Persian (Ghomeshi 1996), Hindi/Urdu (Butt 1995) and Bengali, for example, also have this type of complex predicate, formed with a gerund or participle and a limited set of inflecting verbs.

Another productive and very common type of complex predicate construction involving light verbs occurs with a noun or nominalized verb as preverb. The light verb is usually a general verb which translates as 'do'. The gerund (=preverb) controls θ -role assignment; there is no contribution in this case from the light verb. Examples are given below from Turkish, Persian and Japanese:

(9) **Turkish**: *redd etmek* 'to give advice'; *telefon etmek* 'to phone' (*etmek* = 'do')

Japanese: benkyō suru 'to study'; shuppatsu suru 'to depart' (suru = 'do') Persian: gerye kardan 'to cry'; fotokopi kardan 'to photocopy' (kardan = 'make')

This use was investigated in detail in Grimshaw and Mester (1988) and following publications. It is noted that in such cases there is usually alternation between the plain preverbal constituent and one marked by accusative case.

In this type of construction, θ -roles and argument structure seem to be determined by the 'object' of the finite verb, rather than the finite verb itself. We see in Japanese, for example, that complex predicates with *suru* 'do' may be mono-, bi- or tri-valent:

- (10) a. John-wa Mary-ni <u>hanashi</u>-o shita. John-TOP Mary-DAT talk-ACC suru.
 'John talked to Mary.'
 - b. John-wa Tōkyō-kara shuppatsu-o shita. Hohn-TOP Tokyo-FROM departure-ACC suru.
 'John departed from Tokyo.'
 - c. John-wa murabito-ni [ōkami-ga kuru-to] <u>keikoku</u>-o shita. John-TOP villager-DAT wolf-NOM come-COMP warn-ACC suru
 'John warned the villagers that the wolf was coming.' (Grimshaw and Mester 1988:207)

Question: It might be thought that argument transfer analyses correlate with N+V complex predicates, while V+V complex predicates favor a unification analysis. Is this true? I don't think so.

3.4.3. *Historical origin*. It is my impression from a cursory reading of the literature that these verbal coverb + light verb constructions are always grammaticalized from gerunds or participles, and never from serial verbs. The only possible exception known to me so part is the Oceanic language Titan, where there is a nuclear serial construction involving motion verbs which might be analyzed as complex predication. If this is true, it gives us an important insight into the phrase structure of such constructions.

Question: Are there other demonstrable counterexamples to this claim?

Further discussion of the historical origin of various types of complex predicates can be found in §5 below.

3.5. **Restructuring predicates.** Restructuring predicates and complex causatives in Romance languages also fall under the rubric of complex predication. Many of the same issues arise as with the light verbs discussed in the previous section, and for the moment I will defer further discussion of restructuring predicates.

3.6. Univerbated structures. If multi-word complex predicates such as those described in the previous sections are problematic from the point of view of lexicalist syntactic theories, how about similar constructions which are realised within a single word? The Australian language Gooniyandi, for example, has verbs which are rather similar to Bardi's multi-word complex predicates (McGregor 1990, 2002).

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The main difference is that in Gooniyandi, they are a single word, whereas in Bardi and surrounding languages the predicates are phrasal. Similar structures, where aspectual affixes are cognate with verbs, are found in many of the non-Pama-Nyungan languages of Arnhem Land, and presumably are of the same origin as the abstract finals and multipartite verbs found in North America.

We have evidence from Ngan'kitjemerri⁸ that univerbation (and in this case, polysynthesis) may arise within a single generation (Reid 2004). In the Ngan'kitjemerri data recorded by Gerhardt Laves in the late 1920s, verbs are bipartite and may occur in either order, or separated by other material. The speakers recorded by Nick Reid seventy years later, however, used only univerbated structures.

The facts of Ngan'kitjemerri naturally lead us to questions of abrupt versus gradual grammaticalization. Also relevant is Butt and Lahiri's (2002) claim that light verbs are historically stable, a dead-end for grammaticalization. These two positions are naturally contradictory; a construction cannot simultaneously be a grammatical dead-end and the source of univerbation, unless there are different processes at work.

Question: What evidence do we have with regard to either of these positions?

4. Issues

The following sections discuss in a bit more detail some of the current issues regarding research in complex predicates. I have thus far made no attempt to be systematic or exhaustive.

4.1. Categorization of complex predicates. One possibility for defining the difference between, for example, serial verbs and V+V complex predicates according to a typology of possibilities for argument structure. It is true that this is one of the dimensions along with complex predicates vary is their argument structure

- Serial verbs: sharing of arguments, full lexical verbs
- light verb constructions, where one verb is lexically defective in some way:
 - empty argument structure of inflecting (light) verb; argument structure of the predicate is determined by the coverb alone (e.g. Japanese, Turkish)

⁸A Daly language from Northern Australia

- non-empty argument structure of light verb; argument structure is jointly determined but both elements (Bardi, Jaminjung)
 - * causative etc constructions where light verb increases or decreases the valency of the predicate in predictable ways
 - * constructions where the light verb licences the arguments which may appear (e.g. Wagiman; Wilson 1999)
 - * messier situations where the coverb and light verb both make unsystematic (or largely unsystematic) contributions to the valency of the predicate (Bardi)
- empty argument structure of coverb (some (most?) complex verbs in Warlpiri?)

Question: Can this categorization account for all the different types of complex predicates that we find (in conjunction with some other ways of classifying such structures, including the semantic contribution of the light verb to the clause)?

4.2. Complex predication as pseudo-incorporation. We must also consider complex predicates in relation to the considerable literature on incorporation and pseudo-incorporation. The use of a noun and light verb to form a complex predicate is very similar to what Dianne Massam has described as 'pseudo-incorporation' (Massam 2001). The relevant constructions were described for Niuean but apply also some other Austronesian languages, and also to Persian (Ghomeshi 1996, Ghomeshi and Massam 1994).

The term 'pseudo-incorporation' is used by Massam to refer to a construction where an object Noun Phrase (crucially *not* a bare noun) and a verb form a closeknit constituent (although not a single word). It is terms 'pseudo-incorporation' rather than 'true' incorporation because the 'incorporated' category is phrasal, and it is not physically incorporated into the verb. (11) below illustrates the alternation:

- (11) a. $[Takafaga] t\bar{u}mau n\bar{n} e ia e tau ika.$ hunt always EMPH ERG he ABS PL fish. 'He is always fishing.'
 - b. [Takafaga ika] tūmau nī a ia.
 hunt fish always EMPH ABS he.
 'He is always fishing.'

(Massam 2001:157)

In (11a) we see V-S-O word order and ergative case assigned to the subject (this is the usual constituent order and case marking pattern). In (11b), however, the object ika 'fish' intervenes between the verb and the subject, and is not case-marked. The 'incorporated' nouns may appear with modifiers, including conjoined constituents. (12) illustrates the structure usually assumed for noun incorporation (e.g. Baker (1996)).

(12)
$$V^0$$

 $N^0 V^0$

Since Niuean N-components of complex predicates can be phrasal, we cannot use the structure in (12), as the 'incorporated' element is not an N⁰, and X' constituents are not permitted beneath an X⁰ node. For this reason, Massam claims that the appropriate characterization of the Niuean construction is a base-generated bare NP object, which is then fronted along with the rest of the VP to IP-initial position (resulting in V-initial order). Massam (2001:165) draws the following tree:



Such structures show some similarities to the complex predicates in Bardi and other languages. For example, Öztürk (2003) claims that Turkish complex predicates of the *telefon etmek* type are pseudo-incorporated structures.⁹

There are, however, several differences between the pseudo-incorporations of Niuean on the one hand, and other types of complex predicates on the other, such as

⁹Note that Modern Turkish has two types of complex predicates: those productively derived from a gerund or perfective participle in -ib and the light verb durmak 'stop', which mean 'to keep on doing something', and those which follow the template of a non-referential noun and the verb etmek 'do'. (The second type are also found with verbs other than etmek, whereas in Turkish only durmak forms -ib complex predicates.) It is unclear to me, however, whether the Turkish preverbal noun <u>must</u> be non-referential or generic, or merely non-specific. Compare Ali bir kitap aldi. 'Ali bought some book or other' (non-specific but referential), which is presumably identical in structure to Ali kitap aldi, which has a non-referential reading.

those found in the Nyulnyulan languages of Norther Australia. The main difference is in the productivity of the construction; from Massam's description (e.g. p. 172) pseudo-incorporation is productive in Niuean. It occurs with an open class of verbs and any restrictions on its application are the result of the structural properties of the pseudo-incorporating noun phrase rather than the properties of the verbal head. There are no examples (that I have been able to find) of argument transfer or sharing between the object and the verb. Niuean pseudo-incorporation does not involve light verbs, even though the predicate head is 'complex'.

Another difference between pseudo-incorporation and Nyulnyulan complex predicates is that pseudo-incorporation obligatorily produces intransitive clauses from transitive ones (that is, internal arguments are incorporated¹⁰). This is not the case with Nyulnyulan complex predicates. Nyulnyulan preverbs are not necessarily objects (or indeed arguments at all) of their light verb.

Question: Are pseudo-incorporations really complex predicates of the type defined above?

4.3. Predicate unification. A further issues in the syntax of complex predication is how each component of the complex predicate unifies with the other components of the clause. There are several competing analyses as to the proper relationship between the preverb and the inflecting verb and the way that each contributes to the assignment of arguments within the clause. The main arguments involve argument *unification* versus argument *transfer*. That is, does the preverb merge with the light verb, each contributing components of their a[rgument]-structure specification to the resulting complex predicate, or does the light verb have no a-structure of its own, and the a-structure of the preverb is transferred over to the light verb? The third analysis (mostly within LFG and conceptual semantics) is that the formation of complex predicates involves not specifically a-structure unification, but LCS (lexical conceptual structure) unification/merger as well. Samek-Lodovici (2003) combines the two, in that his theory involves both transfer and unification. Finally, we have the theory of Hale and Keyser (2002), which involves a different approach. Under the Hale and Keyser analysis, all verbal predicates are underlyingly 'complex', in that they involve a root and a verbal head, which undergo 'conflation'.

¹⁰There is another type of pseudo-incorporation in Niuean, where an instrument is incorporated, leaving the phrase transitive.

Under the unification analysis (e.g. Butt 1995; see also Wilson 1999) the deficient argument structure of the light verb is merged with the full a-structure of the preverb (via the same mechanisms in LFG by which other elements of f-structures are merged).¹¹ The resulting predicate has a complex argument structure (from multiple sources), but behaves as a single constituent. Conflicting specifications crash. Butt (1995:147ff) (working on Urdu) is able to rule out ungrammatical combinations between preverbs and the light verb *par* 'fall' automatically. The verb *par* is negatively specified for 'conscious choice' on the action tier (represented as AFF-cc). If *par* is combined with preverbs positively specified for 'conscious choice', however, the resulting structure will not be coherent.

The argument transfer analysis was first formalized, to my knowledge, in Grimshaw and Mester (1988). They argue specifically against a unification of *suru* and its object, favoring instead an analysis whereby some of the θ -role assigning properties of the object are *transferred* to the verb. As Grimshaw and Mester (1988:205) describe it, the noun of the complex predicate "lends" its θ -roles to the verb *suru*, which leaves the noun an impoverished θ -marker. There is no unification or merger, only licensing transfer. The motivation for θ -transfer stems from the strict locality of θ -role assignment. That is, NPs are assumed to be opaque to θ -marking; a θ -role can be assumed to a NP, but it cannot be assigned *into* or *out of* a NP.

In a different framework, Samek-Lodovici (2003) argues for an analysis which amounts to *both* transfer and unification. Samek-Lodovici's analysis of light verbs is an extension of a line of work that treats light verbs within a framework of the interrelationship of argument structure and Lexical Conceptual Structure (LCS) (based on Jackendoff 1990). Under this proposal, argument variables (as specified by the verb) are linked to variables within the LCS (the links are represented by subscribe indices); it is the combination of LCS variables and argument-variables (hereafter a-variables) which leads to the interpretation of the arguments in the clause — a-variables determine argument status, the links to LCS (and the LCS matrix itself) determine interpretation. This analysis decomposes the notion of θ -role assignment into three sub-components — 1) the number of arguments (or a-variables) the verb subcategorizes for, and their configuration; 2) the variables

¹¹Both Butt (1995) and Wilson (1999) are working within a modified LFG, where 'pred' features are replaced by a LCS (lexical conceptual structure), based on the primitives defined in Jackendoff (1990). For unification in LFG more generally, see Bresnan (2001:56 ff).

contained in the LCS, and their relations to event structure; and 3) the linking indices between the verb's a-variables and the variables contained in the LCS.

Example (14) below illustrates the model for the English simple transitive predicate 'freeze', as in 'the wind froze my hair':

- (14) a. a-structure: freeze $(x_i (y_k))$
 - b. LCS: [CAUSE (W_i , (BECOME (Z_k , ICE)))]
 - c. 'The wind_j froze my hair_k.'

Samek-Lodovici (2003:838) argues (building on claims in Ritter and Rosen (1993) and others) that the difference between a light verb and its non-light counterpart is that thematic indices have been erased. Thus light verbs come with an argument structure but without a set of links between the a-variables and the LCS. Thus adicity is preserved in light verb derivation, but the semantics of thematic assignment are not. Index erasure is illustrated for the Bardi verb -boo- 'hit, poke' in (15):

(15)	Before index erasure:		After index erasure
	$-boo_{non-light} - (\mathbf{u}_j \ (\mathbf{v}_k))$	\rightarrow	- boo_{light} - (u(v))

Index erasure allows us to posit then that indices from the a-variables of the other component of the complex predicate (in Bardi terms, the 'preverb') are transferred onto the light verb. That is, the light verb can pick up the indices of the a-variables of the preverb.

Indices are transferred from other components of the complex predicate to the astructure of the light verb. Samek-Lodovici (2003:850) gives the following derivation for the Italian complex predicate *dare una strizzata* 'wring out' (<x> in the astructure indicates a suppressed argument):

(16)	a.	I ragazzi hanno dato una strizzata ai panni.
		the boys have given a wringing to the clothes.
		'The boys wrung out the clothes.'
	b.	$dare_{non-light} \ (u_i \ (v_j \ (w_k))) - index \ erasure \rightarrow dare_{light} \ (u \ (v \ (w)))$
	c.	Variable transfer:
		Before: dare _{light} (u (v (w))) + strizzata (z_{ev} ($\langle x \rangle_i$ (y_k)))
		After: dare _{light} $(u_i (v_k (w_{ev}))) + strizzata (z_{ev} (_i (y_k)))$

Samek-Lodovici (2003:854, 859) states that one of the advantages of this analysis is the preservation of the original adicity of the light verb. This is necessary in Italian to account for the combination of different nominalizations with different light verbs, where the selection criterion is adicity (*fare* selects intransitive nominalizations, such as *camminata* 'walking', *remata* 'rowing' and *caduta* 'falling', which *dare* occurs with transitive nominalizations, including *strizzata* 'wringing' and *accordata* 'tuning').

The operations that trigger index erasure and argument suppression are not clear from Samek-Lodovici's (2003) discussion, however. At one point it is given as a point on which languages vary (their ability to suppress arguments or the extent of index transferral between non-light and light verbs). This is an advantage for us when describing Bardi, as unification analyses will be subject to adicity problems. A further weakness of this approach is that the order in which indices are reassigned to a-variables is very unclear. It could be stipulated or perhaps it is meant to fall out from universal thematic hierarchies. I suspect the latter.

Question: What types of evidence can we use to decide between unification-based and transfer-based analyses of argument sharing constructions? What are the relative advantages and disadvantages of each approach? Are there alternatives?

It is an interesting methodological issue that the literature on argument problems in serial verb constructions is largely framed in terms of argument sharing rather than transfer; cf. Baker (1989) and associated work (and the discussion in Newmeyer 2004).

4.4. Hale and Keyser (2002). While in the previous section we saw theoretical models of complex predicates where two structures were merged or fused, the Hale and Keyser (2002) approach is rather different. Hale and Keyser (2002) is a theory of argument structure which seeks to capture all alternations in argument structure in l-syntax; that is, it captures the idea that roots themselves have complex derivational structure. For example, denominal intransitive verbs such as 'work' or 'fish' are derived by conflating a nominal element with an abstract verbal head (for out purposes 'conflation' can be viewed as a restricted instance of MERGE, or a type of abstract incorporation).¹² Thus the difference between simple and complex predicates is not in the underlying representation, but in the surface conflation or the realization as S-syntax.

¹²There are summaries of the main ideas of the Hale and Keyser (2002) framework in Folli *et al.* (2003), Hale and Salamanca (2001) and Lin (2001:Ch. 2).

A number of different constructions and a-structure alternations can be neatly captured within this theory. Firstly, consider English deadjectival verbs, such as 'redden', 'darken' or 'clear'. In Hale and Keyser's framework these verbs are formed from an adjectival complement to an abstract verbalizing head. The adjective then conflates into the verb, resulting in a deverbalized adjective. (17) gives an example of the tree for the unaccusative verb 'darken', as in 'the room darkened'.



Consider now the transitive deadjectival verbs (as in 'Bertie darkened the room (by closing the curtains)'). In the Hale and Keyser framework, these verbs are built on the complex structure given in (17) above. Another abstract causative head (or 'light verb') takes the monadic structure of (17) as its complement. The adjective-verb complex then conflates into the higher verb.



Hale and Keyser (2002:Ch. 4) compare English verbs of this type (e.g. deadjectivals) with overt transitivization in Athabaskan and Uto-Aztecan languages, as well as complex predicate structures in Ulwa and the other Misumalpan languages. They argue for Ulwa (pp. 119-129), for example, that the 'theme' morphemes (which signal whether the stem is intransitive or transitive) fill the verbal head. An example is given in (19) with the morpheme -da, which forms unaccusatives. (19) Ulwa

Kuring abuk-d-ida. canoe capsize-DA-PST

'The canoe turned over.'





A very similar analysis can be applied to Bardi complex predicates. Under this analysis, the V head is realized overtly as the light verb, while the Root slot is filled by the preverb. Folli *et al.* (2003) have a similar analysis for complex predicates in Persian.

4.5. **Issues in phrase structure.** Finally, we should consider the structural configuration of the preverb and light verb.

In the LFG literature, configurational structure does not play a large role in the determination of syntactic interpretation, which is instead handled by the F(eature) Structure, represented by attribute-value matrices. The illustration below is from Butt's analysis of Urdu. The matrix below represents the result of fusion of the a-structures of the two verbs *banaa* 'make' and *liyaa* 'take-PERF.M.SG'. Constituent structure, especially between the two verbs, is represented as flat; a-structure is represented through the Conceptual structure matrix.¹³

(20) Anjum=ne haar banaa li-yaa.
Anjum.F=ERG necklace.M=NOM make take-PERF.M.SG
'Anjum made the necklace completely, on purpose.' (Butt 1995:188)

 $^{^{13}}$ I have omitted the node annotations from the tree. See further Butt (1995:188) for the meaning of the abbreviations in the f-structure.



Within GB and related theories, opinions differ as to the correct tree structure on which to represent X+V complex predicates. On the one hand, we have authors whose complex predicate trees are identical to incorporation trees:



There is the variation on this, seen above for Niuean (Massam 2001) and Turkish, where the 'N' category is phrasal (the tree is otherwise the same):



Then, there are those who treat the light verb as a 'little-v' (or a 'big-V') projection above VP.



This representation is intuitive for the languages where preverbs are productively derived from verbs. Megerdoomian (2001:116-119), for example, argues for a similar structure underlying the Persian complex predicates with *kardan* 'make'. An illustration (from Megerdoomian (2001:117)) is given in (24), using the complex predicate gerye kardan 'cry'. The 'inner event' is the nominalized verb, while the 'outer event' is the inner event combined with the light verb (the terms are Megerdoomian's).





Here the nominal root *gery*- 'tear/crying' combines with a V-head to produce an unaccusative verb. This is then nominalized with the suffix *-e*. This is the 'inner event' represented by the preverb, which then combines with the light verb *kardan* 'make'.

In a different framework, DeLancey (1991) claims that there are three stages to auxiliation of serial verb constructions —

- (25) a. serialization
 - b. auxiliation
 - c. morphologization

Crucially, auxiliation depends on contiguity in DeLancey's (1991) scenario. The light verb interpretation also depends on synchronic adjacency in Turkish. The same is not true in Urdu (Butt 1995), however.

Question: Is adjacency crucial to grammaticalization? (I assume that adjacency is better thought of as strict constituency.)

4.6. Further issues in light verb analysis.

4.6.1. Light verbs versus auxiliaries. In several parts of the world complex predicates involving light verbs have been traditionally analysed as auxiliary-main verb constructions; that is, as fundamentally no different from constructions such as English "am Xing". Anderson (2003), for example, discusses auxiliaries in Altay-Sayan Turkic (although he does not discuss alternatives to an auxiliary analysis and (p.c. April 2005) regards arguments such as Butt's (1995) on the differences between auxiliaries and light verbs are highly language specific.

Question: Do we have robust cross-linguistic ways for defining auxiliaries as opposed to light verbs or serialized verbs? Are the tests given by Butt for Urdu applicable to other languages?

The auxiliary terminology has also been used in Australia. Tryon (1978), for example, treats the inflecting verb as an auxiliary and the main lexical verb as some sort of infinitive. I suspect this is because the uninflecting verb carries the lexical meaning. But there are differences in argument structure: auxes like 'be' don't assign theta roles, for example, and in most cases of true auxiliaries, there are no problems assigning head status. The difference is reflected in the treatment of auxiliaries as I-heads, and light verbs as V- or v-heads.

4.6.2. Light verb inventories. Light verb inventories are startlingly similar from language to language. For the languages which have these constructions, similar verbs tend to end up in similar functions. For example, it is very common for the default light verb to be something like 'say' or 'do'; posture verbs commonly end up as aspectual, 'give' as benefactive, and for systems which have event structure classification (McGregor's (2002) idea of verb classification) 'put', 'take', 'walk', 'hit', and 'catch' are overwhelmingly the most common.

Now, the similarity of these verbs and their uses from language to language is intriguing, and could have several explanations.

• Universal pathways of grammaticalization: This argument would be that the same verbs are grammaticalized as light verbs because of strong universal clines (the same 'reason' that 'go' ends up as future tense in many languages).

This would relate the use of these particular light verbs to universal conceptual metaphors.

- Universal amenability to bleaching: These are the verbs that end up 'light' and 'bleached' because they have kind of vague semantics to start off with and are therefore amenable to bleaching in the first place.
- *Empty/defective semantic structure*: Alternatively, are these verbs in fact just defective in their semantic structure even in matrix clauses (e.g. they get their meaning from context even when they are the only verb), so the light verb use isn't really bleaching at all? That is, perhaps such verbs contain only a temporal event structure and a rudimentary argument structure to begin with.

Question: Which of the explanations for the cross-linguistic similarity of light verb inventories is likely to be right? [or is it more than one?]

One of the incidental claims of McGregor (2002) is that the 'light' verbs of Nyulnyulan languages¹⁴ are not semantically bleached.

4.6.3. *Light verb semantics.* (e.g. Wilson's LCSs of light verbs in Wagiman which can be slotted into the semantic structure of the preverb?

- (26) Event structures marked by light verbs:
 - a. mood
 - b. perfectivity (and aspect more generally)
 - c. trajectory of event
 - d. participant information (such as benefactivity, reciprocity)

4.6.4. *McGregor's (2002) arguments.* By far the most thorough treatment of these items is McGregor (2002) on verb classification in Australian languages. By the term 'verb classification', McGregor is referring to the property of some complex predicate constructions where the inflecting verb works to categorize the type of event referred to in the preverb.¹⁵

 $^{^{14}\}mathrm{Note}$ that McGregor (2002) does not accept that these are complex predicates, for which see below.

¹⁵Thus not the more familiar type of 'verbal classifier', known from some Native American languages (such as Chocktaw), where an affix to the verb provides classification information about one of the verb's arguments (usually the object). Nyulnyulan languages do not exhibit this type of classification.

McGregor surveys most of the languages which have these constructions (or similar ones). However, he does not believe that these constructions are complex predicates, and gives a number of reasons for this view (McGregor 2002:262ff). The main ones are given in (27):

- (27) a. either one part or the other (or neither) is identified as the head, not both, according to different tests;
 - b. the definition of a head is problematic anyway; see for example Zwicky (1985), Hudson (1987);
 - c. if complex predicates are defined over 'semantically predicative units' (e.g. Mohanan 1997), and any word class can function as a preverb, we would be led to defining everything as complex predicates;
 - d. the units of the complex predicate do not jointly determine clause structure (cf. Mohanan 1997), since there are mismatches between transitivity as marked on the inflecting verb and the overall valency of the clause.

McGregor argues instead for an analysis of these constructions not as light verbs or complex predicates, but as verb classifier constructions where the inflecting verb is not 'light' in any meaningful sense. Impressionistically, the complex predicate analysis and the classifier analysis do not seem to be mutually exclusive, contrary to the implication of McGregor's line of argument. As argued in Bowern (2004b), following Butt (1995), Wilson (1999) and others, light verbs can function as event classifiers, providing more information about the structure of the event denoted by the other part of the predicate.

McGregor's arguments regarding head properties are bound up with the problem in Nyulnyulan languages of transitivity marking in complex predicate constructions. Since the structure of the complex predicate does not always correspond to the morphological transitivity of the inflecting verb, there is a problem in saying that the two predicative units (the preverb and the inflecting verb) jointly determine clause structure, since the relationship is clearly not additive.

McGregor's solution (p. 277) is that the 'transitive' light verbs (those that may be used in either transitive or intransitive predicates) are unmarked for transitivity, and the differences in the number of transitive and intransitive predicates with each inflecting verb are accounted for by their vectoral configuration (for example, the base semantics some inflecting verbs contain an idea of action directed outwards from the agent, or impact, and this correlates closely with a transitive reading of the predicate as a whole).

If these verbs are unspecified for transitivity, however, why are they only ever transitive when they are not used in preverb-inflecting verb constructions? Why do they all contain a prefix n- $\sim a$ - which correlates almost absolutely¹⁶ with a transitive argument structure in verbs which do not co-occur with preverbs? Why should intransitive verbs be specified for valency, but not 'transitive' verbs? Recall that McGregor does not draw a distinction between light verbs and full semantic verbs, so that any analysis of inflecting verbs in complex verb constructions must also be compatible with other verbal predicates.

4.6.5. Inflection of coverbs. Another parameter along which light verb constructions vary is the ability of the coverb to host inflection. In the Nyulnyulan languages other than Bardi, and indeed in many of the languages of Northern Australia, preverbs inflect for aspect. In Yawuru, for example, they may take *-kadya*, which is an intensive marker. In Nyulnyul the equivalent morpheme is *-garra*.¹⁷ In the Daly River area of the Northern Territory, *-ma* is commonly used (see further Wilson 1999) to mark completive aspect. In Bardi, however, the inflection which preverbs may take is highly limited. The only even remotely productive derivation which some preverbs may undergo is reduplication (for distributivity).

Question: How productive is coverb inflection in languages with these constructions?

4.6.6. Summary: Parameters along which light verb constructions can vary.

- Ability of preverbs to occur with inflecting verb. (might have implications for headedness maybe such constructions are not true head-sharing/argument sharing constructions)
- Ability of inflecting verbs to occur without preverbs (cf Farsi and Worrorra). Preverbs as adverb (Schultze-Berndt 2003:149) captures the idea of headedness and what's dependent on what.

¹⁶There is one verb, *-gala-*, which consistently takes a transitivity prefix but appears with either ergative-absolutive or absolutive case frames, depending on whether the verb means 'live' or 'visit someone'. Note that *-gala-* is also irregular in other ways. In all other cases, verbs in simple predicates which take the prefix $n \sim a$ - take two arguments.

 $^{^{17}\}mathrm{The}\ \mathrm{cognate}\ \text{-}kaj$ is also found sporadically.

- Ability of the coverb to host inflection:
 - eg. continuous marking in many languages
 - Turkic -*ib* marking versus -*a* marking
 - reduplication
 - nothing
- Phrase structure issues
 - separability of coverb and inflecting verb.
 - Sometimes only a subclass of coverbs are separable.
- Preverbs as valency-increasing structures versus valency-neutral ones.
- Light verbs as valency-increasing structures versus valency-neutral ones.
- Ability to stack light verbs.

5. HISTORICAL ORIGINS OF COMPLEX VERBAL CONSTRUCTIONS

Very little work has been done so far on historical change in complex predication. We know very little about the possible historical sources of light verb constructions and the grammaticalization paths for such constructions. We assume a lot but we actually do not have many longitudinal studies; cf Hendery (2005) on the fact there actually isn't that much solid evidence for the hypotaxis < parataxis cline.

5.1. Proposals for light verbs. There have been some proposals in the literature.

Butt (1995) and associated papers (e.g. Butt and Lahiri 2002) claims that light verbs are historically stable, and once the construction arises in the first place it is highly stable and persistent. Gerunds in Indic.

A different view is expressed by the work of Anderson, e.g. Anderson (2003). He claims categorically that all such constructions in Turkic originate through the reduction of earlier serialization. It is difficult to evaluate this claim since he is not very precise about what he means by either auxiliary constructions (which he does not differentiate from complex predicates) or serialization).

A third view as to the origin of the construction can be found in McGregor (2002) (and related papers). For McGregor, one source of complex predicates is ideophones.

Bowern - there are at least 4 sources, including ideophones, but also pseudoincorporation (see separate paper).

5.1.1. Light verbs as the products of serialised verbs. This brings up the first issue which needs further discussion - do all light verbs constructions have the same

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underlying structure? Do languages exhibit more than one type of structure at once?

DeLancy 1991:

- (1) serialization
- (2) auxiliation
- (3) morphologization

5.1.2. Frequency and interpretation as catalysts for grammaticalization. This issues arises directly in relation to the grammaticalization of motion verbs as light verbs or future markers (e.g. Bybee 2005).¹⁸ Bybee (2005) illustrates this argument with the English future (although presumably it should apply as a more general principle). In her analysis, the English 'going to' future developed from a reanalysis of sentences where the verb 'go' was a motion verb which also contained an element of purpose, as in (28) below:

(28) I am going to speake with a friend of mine. (1598)

Bybee argues that it was the cases where the verb was ambiguous in interpretation between motion and purpose which led to a reanalysis of the construction as denoting primarily purpose, as 'be going to' lost its transparency and was applied to situations where no movement was involved.

An interesting point is raised by Shibatani (pers. comm.), however. He points out that in complex predicates in both Atayal and Japanese, the bleached interpretation is is blocked in precisely the cases where it ought to exist. Atayal has serial verb constructions with 'go' marking future/purposive. However, the future connotation is not readily accessible in clauses where there is another motion verb ('go walk to Ulay'), where the most felicitous interpretation is motion, not purposiveness or futurity. It is only in the semantically incongruent serializations, such as 'go occur earthquake', where a motion reading is ruled out and the future interpretation is preferred.¹⁹

¹⁸For a different view see Garrett (2004b).

¹⁹Impressionistically, the same is true for Yan-nhaŋu and multi-verb clauses, where *garama* 'go' appears in its continuative sense more frequently with stative verbs such as *nyena* 'sit' than with other motion verbs.

5.1.3. *Light verbs as grammaticalization in progress*. Several people have argues that light verbs are a category which exhibits 'grammaticalization in progress', i.e. partway along a dynamic cline.

- Karimi-Doostan (2003) v or V paper
- Johanson (e.g. 2002, converbs paper)

Question: What is the status of this idea? It would seem to carry the implication that they're unstable, contrary to Butt and Lahiri (2002).

5.2. Criteria for identifying complex predicates. The following list gives a set of formal criteria for the identification of complex predicates.

- **event structure:** the predicate describes a single event (as viewed by speakers) and not a sequence of conjoined events;
- selection criteria: almost any verb can be in the coordinate construction as long as the two events are consecutive and the subjects are identical, but the verbs in complex predicate constructions are confined to a set of up to approximately 20 verbs (Wurm 1953:514ff) which are 'implicated' in light verb constructions in other languages; they also exhibit non–compositional semantics;
- **word order:** the converb and the inflected verb cannot be separated by intervening material, and constituency is strict;
- nominalization: the predicate as a whole may be nominalized;
- **interrogatives:** the predicate behaves as a single unit for interrogative marking;
- **negation and temporal adverbs:** have scope over the entire predicate, not just the converb.

6. Summary of Issues

Thus in summary, there are important issues to be resolved at all levels of analysis, from basic discussions of what constitutes a complex predicate, how they are formed, how they differ, and how they change. The following set of points should serve as a summary of the more important unanswered questions.

• How does this particular area of grammar (i.e. complex predication) reflect more general tensions between, for example, formalism and functionalism, economy and elegance of description versus completeness of description, and relationship between grammatical architectures and considerations of processing and parsing?

- What do complex predicates tell us about the interaction of syntax and the lexicon in language?
- How different are complex predicates from other others of predicates really? We might compare Hale and Keyser (2002), which develops the idea that all predicates are 'complex' in some sense.
- There are issues for linguistic analysis how should we model a class of objects that have some properties in common but may eventually turn out not to be homogeneous?
- Historical linguists have much to think about too:
 - How do complex predicates arise in syntax? Is it from parataxis, or from metaphor, or subordination, or nominalization? or all of the above in different circumstances?
 - What are the specific conditions under which syntactic reanalysis takes place?
 - Are complex predicates a stable construction? What does it mean to ask this question of this construction in particular?
 - What grammaticalisation clines do they participate in? Is there a cline of the form
 - (29) full verb \rightarrow light verb \rightarrow auxiliary \rightarrow affix

or something similar? Or do we not find auxiliaries and light verbs participating in the same type of grammaticalization? Is it a function of the semantics of verbs that tend to grammaticalize as light verbs, or are other factors more important?

- Why are gerunds/participles so susceptible to recruitment as coverbs? because they are alread stripped for tense (and maybe arguments?)?
- Light verbs themselves fall into different types. Some light verbs act as hosts for inflection (and we want to analyze them as having undergone argument transfer). Others seem to be specifiers of event structure, and are more easily explained using unification-based approaches.
- Do they need a different analysis? How about light verbs that both are hosts for inflection and serve to structure events?

- In complex predicate constructions, what is the head?
 - the coverb hence aux analyses and argument transfer analyses
 - the inflecting verb implicit in McGregor (2002) for example, "modifier" analyses.
 - both Butt (1995), Wilson (1999) and other unification-based analyses.
 - This question arises less often with regard to serial verbs.
- Within individual languages, are there different types of complex predicates? [clearly, yes] Are there limits to their interaction?
- Some of the more urgent syntactic questions:
 - How is argument structure determined in Complex Predicates?
 - * Margetts disjointly, cf. valency/transitivity distinctions.
 - * Grimshaw and Mester (1988) argument slots, the number of which is specified, but verb has otherwise empty argument structure. cf Wilson (1999) and Samek-Lodovici (2003) for similar ideas with different implementations.
 - * Idiom analyses.
 - How does this all relate to the adicity problem (Ackerman and Webelhuth 1998)?
 - What is the relationship between complex predicate formation and compounding, particular in the version of complex predicate analysis where complex predicates can be formed both lexically and syntactically. Is it just a wordhood problem?
- A few more theoretical issues:
 - messy proposals involved in little-v.
 - * sometimes v licenses arguments (e.g. in applicatives)
 - * sometimes it licenses event structure
 - * sometimes it licenses θ -roles.
 - * sometimes it appears to do more than one of these
 - v as lexical head versus functional head? in the same language? in CPs themselves?

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