Beyond the Constituent
A Dependency Grammar Analysis of Chains

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Abstract

The paper introduces a unit of syntax beyond the constituent called the *chain*. A number of mechanisms are shown to be sensitive to chains, e.g. the formation of predicates and idioms, the ellipses of gapping, pseudogapping and VP-ellipsis, and the elided material of stripping and answer fragments. The presentation is couched in a surface syntax, dependency-based framework, as opposed to a constituency-based one. While the chain can be defined in a manner consistent with constituency, doing so requires that one adopt some controversial assumptions about the nature of constituency structure. The potential of the chain concept is great; it is the tool necessary to address the manner in which semantic compositionality occurs in the syntax.

1.   Constituent and non-constituent units

The constituent is a fundamental unit of syntactic analysis, numerous mechanisms being sensitive to constituents. Syntax textbooks, for instance, often employ permutation and pronominalization operations in order to identify the constituent structure of sentences, e.g. topicalization, clefting, pseudoclefting, stripping, answer fragments. There are, however, mechanisms sensitive to syntactic units beyond the constituent, like verb complexes, the components of idioms, the gaps of gapping, the ellipses of VP-ellipsis, the elided material of stripping and answer fragments.

(1)   Sue *will read* the novel.
(2)   Sally *sent* Fred *to the doghouse*.
(3)   Larry *put* candies *in the mailbox*, and Bill flowers.
(4)   This community *sends* boys *to school*, but it doesn't girls.
(5)   *Tom visited* his father, not his mother.
(6)   What should one do? - (*One should*) Keep an open mind.

The analytic verb complex *will read* in (1) does not qualify as a constituent under standard assumptions, yet it seems clear that it is a syntactic unit of some sort. Consider in this regard that the corresponding synthetic verb form in French,

i.e. *lira* 'will read', does qualify as a constituent (in constituency grammar).[1] The components of the idiom in (2), i.e. *sent...to the doghouse*, do not qualify as a constituent under standard assumptions. It seems plausible, though, that they should qualify as a unit of some sort in the syntax since they form a semantic unit. The antecedent to the gaps in (3), i.e. *put...in the mailbox*, does not qualify as a constituent, yet it too must be a unit of some sort since the gaps of gapping are not arbitrary, e.g. **Larry put candies in the mailbox, and Bill flowers under*. The antecedent to the VP-ellipsis in the instance of pseudogapping in (4), i.e. *sends...to school*, is not a constituent, yet it also must be a unit of some sort since the antecedent to a VP-ellipsis is, like the antecedents to the gaps of gapping, not arbitrary, e.g. **This community sends boys to school, but it doesn't girls to*. The situation with the stripping and answer fragment examples is a bit different; there the remnants qualify as constituents. This fact indicates that the underlying mechanisms are sensitive to constituents in one particular sense. In another sense though, namely with respect to the elided material, the constituent is not the relevant unit: the elided *Tom visited* is not a constituent in (5), and the elided *one should* is not a constituent in (6).

The goal of this paper is to introduce a new unit of syntax beyond the constituent. This novel unit shall be called *chain* in line with O'Grady (1998).[2, 3] The chain concept shall be defined and developed within a dependency-based framework, as opposed to a constituency-based one. The overall message shall be that by acknowledging both the constituent and the chain as syntactic units, a dependency-based monostratal approach to syntax acquires the ability to produce economical accounts of various recalcitrant phenomena. The italicized word combinations in (1) - (6), for instance, all qualify as chains.

The discussion shall also consider whether an analogous constituency-based understanding of the chain is possible. It will be demonstrated that constituency grammar can indeed produce a definition that identifies the same word combinations as chains as the dependency grammar version. Doing so, however, requires that some controversial assumptions about the nature of constituency structure are adopted. More importantly in this area, the dependency-based analysis is preferable due to its economy. Dependency structures generally contain half the number of nodes and edges that constituency structures contain and are hence to be preferred whenever the two competing views succeed at modeling the behavior of an area of inquiry.
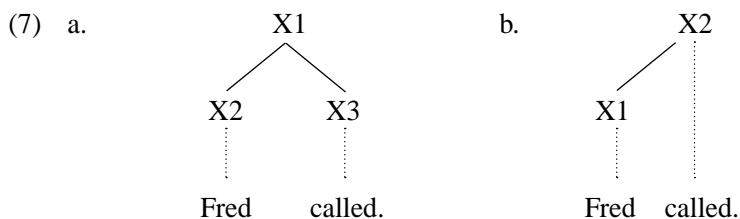
The data presented in this paper is primarily from English. The discussion of predicates, however, relies heavily on data from German as well.

2. Dependency vs. constituency

Dependency grammar is on the periphery of mainstream linguistics, constituency grammars dominating the study of syntax. For this reason, it is necessary

here to first establish dependency's core view of syntactic structure. This task shall be accomplished by contrasting dependency with constituency.

Comparisons of the two – e.g. Matthews (1981 Ch. 4), Engel (1982:27ff), Mel'čuk (1988:12ff), Siewierska (1988:142ff), Jung (1995:15ff), Elst & Habermann (1997:10ff), Eroms (2000:75ff), Hudson (2000:20ff), Tarvainen (2000: 11ff) – emphasize that constituency is a part–whole relation, whereas dependency is a strict mother–daughter relation. The former views words as combining to form greater units, whereas the latter has words attaching to each other, the result being a greater unit. The difference between the two is best understood in terms of the respective trees that each generates.

(7) a.

```
              X1                         b.              X2
            /    \                                      /    ┊
         X2       X3                               X1         ┊
          ┊        ┊                                ┊         ┊
        Fred     called.                          Fred     called.
```

The two words *Fred* X2 and *called* X3 combine in the constituency tree (7a); together they are sisters within the greater unit, which is represented by the higher node X1. In the dependency tree (7b) in contrast, *Fred* X1 attaches to *called* X2, whereby no higher node is generated. The result is a directed mother–daughter relation.

The difference can be understood in terms of the following principles of tree construction.

I.   a. One wordform per node, and
      b. One node per wordform.
II.   One head per node, and
III. One root node per structure.

Constituency grammars and most dependency grammars adhere to Ia, II, and III. The distinction between the two views of syntactic structure lies with Ib. Dependency observes Ib; constituency does not. The nature of projections in constituency grammar necessitates the presence of 'higher nodes'. These nodes do not directly correspond to single words. X1 in (7a) is an example of such a node; it does not directly correspond to either of the two words, but rather it represents the two together. In the dependency tree (7b) however, each node corresponds directly to exactly one word. Dependency thus requires a strict one-to-one correspondence between words and nodes, whereas constituency is a one-to-more-than-one relation.

Given this graph-theoretic distinction, discerning between dependency and constituency grammars is a straightforward matter. All those grammars that
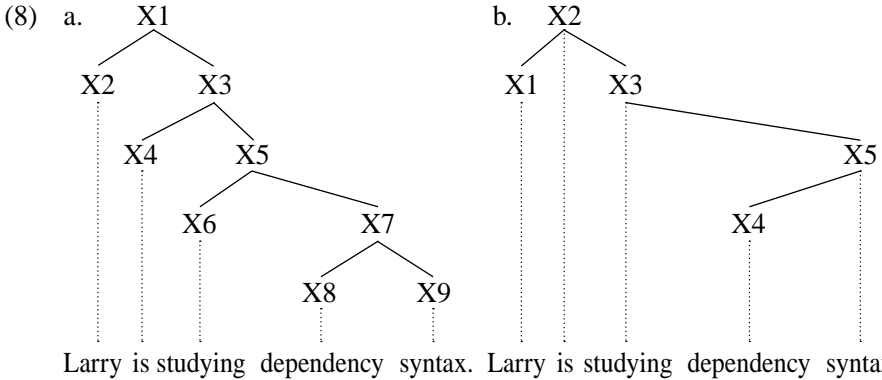
have the number of nodes exceeding the number of words are by definition constituency grammars. Hence the grammars that currently dominate the study of syntax in Anglo-American linguistics are constituency grammars, e.g. GB/MP, GPSG/HPSG, LFG, CG, etc.[4] Dependency grammars, in contrast, occupy a peripheral position in Anglo-American linguistics, e.g. Lexicase (Starosta 1988), Meaning-to-Text (Mel'čuk 1988), Word Grammar (Hudson 1990, 2000, 2003). In mainland Europe however, dependency grammars are more widespread.

The initial choice between constituency and dependency as a principle upon which to build a theory of syntax has far reaching ramifications. If one chooses constituency over dependency, then the additional nodes that constituency necessitates create possibilities that do not exist if one chooses dependency. For instance, the c-command relation as it is understood in GB/MP is not possible in the flatter dependency structures. If one chooses dependency in contrast, then the relative paucity of structure that dependency necessitates forces one to enrich the grammar via increased 'functionalism', i.e. the grammatical relations and argument vs. adjunct distinctions are viewed as primitives rather than being derived via the configuration. Another noteworthy difference is that dependency structures generally – but not necessarily – end up being flatter than constituency structures – see Starosta (1988:106), Heringer (1996:27f.), Hudson (2000: 22). The additional nodes of constituency enable the syntactic structures to be more layered than the corresponding dependency structures. It is this flatness of structure associated with dependency that makes the 'chain' concept introduced in section 4 possible.

3. Excurse on constituent structure

The purpose of this paper is to augment syntactic description with a novel syntactic unit, i.e. the chain. This unit can be viewed as picking up where the constituent leaves off. The reader versed in the dependency vs. constituency distinction will, however, have noticed a problem of sorts in this area. Dependency is viewed as an opposing principle to constituency, which implies that dependency structures cannot be understood in terms of the constituent, since the constituent is a unit of constituency syntax. This section demonstrates that the constituent can very well be taken as a unit of dependency syntax too. The results of many constituency tests actually support viewing dependency structures in terms of constituents. In fact, these tests support the dependency view of constituent structure over the constituency view.

One can define the constituent in a theory-neutral manner as follows: ANY NODE PLUS ALL THE NODES THAT THAT NODE DOMINATES. This definition is applicable to constituency as well as dependency hierarchies.

(8) a.

```
              X1
            /    \
          X2      X3
                 /  \
               X4    X5
                    /  \
                  X6    X7
                       /  \
                     X8    X9
   ⋮    ⋮     ⋮      ⋮      ⋮
 Larry is studying dependency syntax.
```

b.

```
              X2
            /    \
          X1      X3
                    \
                     X5
                    /  \
                  X4
   ⋮    ⋮     ⋮      ⋮      ⋮
 Larry is studying dependency syntax.
```

The constituency tree (8a) shows eight constituency constituents: *Larry, is, studying, dependency, syntax, is studying dependency syntax, studying dependency syntax*, and *dependency syntax*. Applying the definition in a neutral manner to the dependency tree (8b) also, one arrives at just four dependency constituents: *Larry, studying dependency syntax, dependency syntax*, and *dependency*. Note that according to the definition, the words *is, studying*, and *syntax* do not each alone qualify as a dependency constituent since they dominate other nodes. Therefore with respect to constituent structure, dependency and constituency make quite different predictions. Dependency predicts half the number of constituents in (8) as constituency.

As stated, it is not common for dependency structures to be viewed in terms of constituents. The issue, though, is merely a matter of terminology. Dependency grammarians use various terms to denote the syntactic unit defined in the definition. Tesnière (1959/69:14) calls the unit a *nœud* 'node'; Kunze (1975:13) names it a *vollständiger Teilbaum* 'complete partial tree'; Hays (1964:520) and Mel'čuk (1988:14) call it a *subtree*; Groß (1999:69) and Eroms (2000:86ff) call it a *phrase*. Pickering & Barry (1993:865) use the term *full-constituent*. Hudson (1984:92) and Siewierska (1988:142) use the term *constituent*. This paper follows Hudson and Siewierska in this regard. The advantage of using the term *constituent* is that it makes a comparison of the dependency and constituency views of constituent structure possible.

The results of many standard constituency tests support the dependency view of constituent structure over the constituency view. Five tests illustrating this fact shall be employed here: topicalization, clefting, pseudoclefting, stripping, and answer fragments. These tests are widely used in linguistics and syntax textbooks. The belief is that such tests help identify the syntactic structure of sentences. The first test employed here is topicalization (Allerton 1979:114f, Grewendorf 1988:15, Borsley 1991:24, Wöllstein-Leisten et al. 1997, Ouhalla 1994:20ff, Haegeman & Guéron 1999:46, Lasnik 2000:10, Meibauer et al. 2002:

127, Poole 2002:32ff, Radford 2004:72). Topicalization is a permutation operation; it occurs when a string is moved to the front of the sentence.

(9)   Larry is studying dependency syntax.
    a. * Is, Larry studying dependency syntax.
    b. * Studying, Larry is dependency syntax.
    c. * Dependency, Larry is studying syntax.
    d. * Syntax, Larry is studying dependency.
    e. * Is studying dependency syntax, Larry.
    f.   Studying dependency syntax, Larry is.
    g.   Dependency syntax, Larry is studying.

Topicalization cannot identify *Larry* as a constituent since it is already in first position in (9). It is safe to assume, though, that *Larry* is a constituent since other constituency tests identify it as one. Thus with respect to topicalization, one can assume at least three constituents in (9). Since constituency predicts eight, but dependency just four constituents, the dependency prediction is significantly more accurate. Note that topicalization fails to identify *dependency* as a constituent even though both dependency and constituency predict it to be one. The relevant generalization in this respect is that no operation may separate a pre-noun element from its noun. This generalization is equally applicable to both dependency and constituency structures.

    Another noteworthy aspect of the data in (9) is that the finite VP *is studying dependency syntax* is not identified as a constituent by the test, as illustrated in (9e).[5] This observation is central to the dependency vs. constituency debate. Although it is not a necessary trait, the binary subject-predicate division of the clause is a widespread assumption at the core of most constituency grammars – especially if the language is English.[6] Dependency syntax, in contrast, cannot acknowledge this binary division. Like topicalization, the other constituency tests below all fail to identify the finite VP as a constituent. This situation supports the dependency view of constituent structure.

    Consider clefting next (Brown & Miller 1980:25, Borsley 1991:24, Napoli 1993: 148, Dinneen 1995:462, McCawley 1997:64, Haegeman & Guéron 1999:49):

(10) Larry is studying dependency syntax.
    a.   It is Larry who is studying dependency syntax.
    b. * It is is that Larry studying dependency syntax.
    c. * It is studying that Larry is (doing) with dependency syntax.
    d. * It is dependency, that Larry is studying syntax.
    e. * It is syntax that Larry is studying dependency.
    f. * It is is studying dependency syntax that Larry (is doing).
    g.   It is studying dependency syntax that Larry is doing.
    h.   It is dependency syntax that Larry is studying.

Clefting identifies only three constituents, two of which topicalization identified. Hence there is a pattern emerging. This pattern is confirming the dependency prediction and refuting the constituency prediction. Notice again the pre-noun adjective *dependency* is not identified as a constituent despite the overlapping dependency and constituency predictions.

Pseudoclefting is the third test (Brown & Miller 1980:25, Borsley 1991:24, McCawley 1997:661, Haegeman & Guéron 1999:50):

(11) Larry is studying dependency syntax.
    a.   (The one) who is studying syntax is Larry.
    b. * What Larry studying syntax is is.
    c. * What Larry is doing with syntax is studying.
    d. * Which syntax Larry is studying is dependency.
    e. * Dependency what Larry is studying is syntax.
    f.   What Larry is doing is studying dependency syntax.
    g.   What Larry is studying is dependency syntax.

Pseudoclefting identifies just three constituents, the same three as clefting. Thus the dependency prediction receives more support. Constituency, in contrast, is predicting much more structure than the results of the tests warrant.

The fourth constituency test is stripping (McCawley 1997:62). Stripping occurs when a single constituent is tacked on to the end of the sentence, often accompanied by an additive or negative adverb, e.g. *also, too, not*.

(12) Larry is studying dependency syntax.
    a.   Lárry ís studying dependency syntax, not Bíll.
    b. * Larry ís studying dependency syntax, not ísn't.
    c. * Larry is stúdying dependency syntax, not ignóring.
    d. * Larry is studying depéndency syntax, not constítuency.
    f. * Larry is studying dependency sýntax, not phonólogy.
    g. * Larry ís studying dependency syntax, not ísn't studying it.
    h.   Larry is stúdying dependency syntax, not ignóring it.
    i.   Larry is studying depéndency syntax, not constítuency syntax.

Sentence (12f) is disallowed on the intended reading, i.e. 'Larry is not studying dependency phonology'. Stripping identifies the same three constituents as the previous tests.

The fifth and final test to be considered here is answer fragments (Brown & Miller 1980:25, Grewendorf 1988:18, Dinneen 1995, Wöllstein-Leisten et al. 1997:14, Haegeman & Guéron 1999, Meibauer et al. 2002:127). If a string can be questioned and then appear as an answer fragment, then that string qualifies as a constituent in the corresponding complete sentence:

(13) Larry is studying dependency syntax.
   a. Who is studying dependency syntax? - Larry.
   b. What about Larry studying dependency syntax? - *Is.
   c. What is Larry doing with dependency syntax? - *Studying.
   d. What type of syntax is Larry studying? - Dependency.
   e. ??Dependency what is Larry studying? - *Syntax.
   f. What is Larry doing? - *Is studying dependency syntax.
   g. What is Larry doing? - Studying dependency syntax.
   h. What is Larry studying? - Dependency syntax.

In this case, the data completely overlap with the dependency prediction. The constituency prediction, however, has four more constituents than the test can verify.

The data in (9) - (13) illustrate that the dependency view of syntactic structure matches the results of many constituency tests quite closely, more closely than the constituency view. There are of course other constituency tests, e.g. adverb insertion and coordination, that are not as supportive of dependency as the five tests mentioned here. I believe, however, that the five tests utilized here are more reliable as diagnostics for constituent structure than adverb insertion and coordination.[7, 8] This situation is surprising since, as stated above, the constituent is not generally viewed as a unit of dependency syntax. Constituency syntax, e.g. Radford (1997:108f), seeks to address the discrepancy in the number of constituents it predicts and the number actually identified by the tests by referencing projection types. It stipulates that many constituency tests are sensitive to only a particular type of projection, namely the maximal projection. Dependency, in contrast, does not need such a stipulation. The strings that do not correspond to the maximal projections of constituency syntax do not qualify as constituents to begin with in dependency syntax.

The discussion below will at times refer to constituents. When it does so, "dependency constituent" is meant, not "constituency constituent". Despite the promise that the analysis of structure in terms of dependency constituents has shown in this section, an appropriate analysis of the other phenomena mentioned in the introduction cannot rely on the constituent alone. For this reason, the chain is introduced.
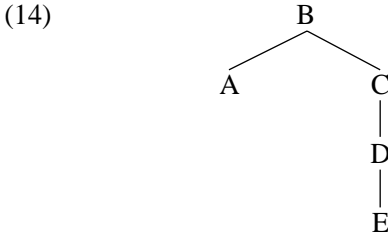
4. Chains

The *chain* is defined with dependency hierarchies in mind. The actual definition thereof is borrowed from O'Grady (1998:284):[9, 10]

> **Chain**: The words A ... B ... C ... (order irrelevant) form a chain iff A immediately dominates B and C, or if A immediately dominates B and B immediately dominates C.

Kunze (1975:12) provides a more formal definition of the concept; he calls the unit a *Teilbaum* 'partial tree'. Pickering & Barry (1993) also name the chain unit; they call it a *dependency constituent*.[11] Concerning single nodes alone, they shall be viewed as chains consisting of a single link.

In order to illustrate the syntactic unit that O'Grady's definition identifies, an abstract dependency hierarchy shall be used.

(14)

```
              B
            /   \
          A       C
                  |
                  D
                  |
                  E
```

The first thing to note about this hierarchy is that the linear order of the elements is irrelevant; what counts is only the vertical order. According to the definition, there are 15 chains in (14): A, B, C, D, E, AB, BC, CD, DE, ABC, BCD, CDE, ABCD, BCDE, and ABCDE. Consider the combination AB; it qualifies as a chain because B immediately dominates A. Consider the combination ABC; it qualifies as a chain because B immediately dominates both A and C. Consider BCD next; it qualifies as a chain because B immediately dominates C, and C immediately dominates D. The following 16 node combinations do not qualify as chains according to the definition: AC, AD, AE, BD, BE, CE, ABE, ABD, ACD, ACE, ADE, BCE, BDE, ABCE, ABDE, and ACDE. The combination AC does not qualify as a chain because A does not immediately dominate C nor does C immediately dominate A. The combination ACD does not qualify as a chain because A does not immediately dominate either C or D nor does C or D immediately dominate A, etc.

An important aspect of the chain concept is that the words can often be discontinuous, yet still qualify as a chain. This situation obtains for instance when ternary (or more) branching occurs.

(15)

```
          B
        / | \  \
      A   C    D
      :   :    :
    Larry plays soccer Mondays.
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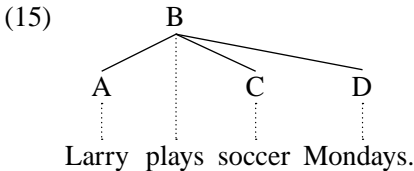
This example contains 11 chains: A *Larry*, B *plays*, C *soccer*, D *Mondays*, AB *Larry plays*, BC *plays soccer*, BD *plays...Mondays*, ABC *Larry plays soccer*, ABD *Larry plays...Mondays*, BCD *plays soccer Mondays*, ABCD *Larry plays soccer Mondays*. Note that two of these chains are discontinuous, i.e.

BD and ABD. The example contains four non-chains: AC *Larry...soccer*, AD *Larry...Mondays*, CD *soccer Mondays*, ACD *Larry...soccer Mondays*. The combination CD is noteworthy because C and D are continuous, yet the string does not qualify as a chain.
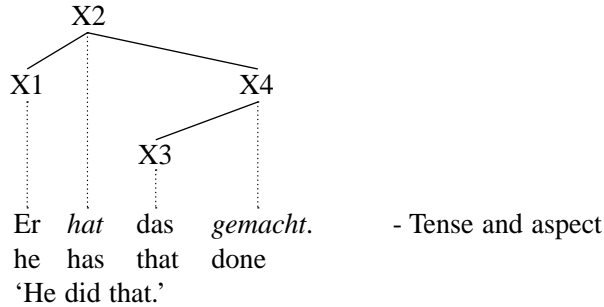
The idea developed and defended in the following sections is that the chain is an important unit of syntax, meaning certain mechanisms of syntax are sensitive to chains. It shall be demonstrated that the words constituting predicates and idioms must form chains. Furthermore, it will be shown that the elided material of various ellipsis mechanisms – e.g. gapping, pseudogapping, stripping, and answer fragments – must correspond to chains.
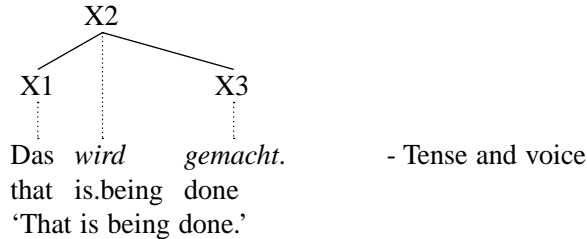
5. Predicates

The examination of predicates shall begin with data from German and then move to English. The reason for starting with German is that the predicate concept in the linguistic tradition of the German language is less ambiguous than the term in the linguistic tradition of English. The German term *Prädikat* generally refers to a specific combination of words in any given sentence. The English term *predicate*, in contrast, conjures up various associations, none of which is particularly clear. For instance, there is the predicate of Predicate Calculus, which is essentially an abstract semantic concept that is understood in terms of argument structures. Then there is the traditional predicate of logic stemming from antiquity, whereby a predicate is that which is predicated of the subject. This understanding of the concept is present in constituency grammar; the predicate corresponds to all the material in a simple declarative sentence except for the subject, meaning it is equivalent to the VP of S→NP+VP.[12] Finally, there is the notion of predicate that is more akin to its current usage in the linguistic tradition of the German language – see Homberger (1993) for a comprehensive discussion of the concept and its history. More often than not, the term *Prädikat* refers to a specific word, usually a verb, or a specific combination of words in a sentence. This combination is sometimes referred to as the *Verbalkomplex* 'verb complex' or *verbale Gruppe* 'verb group'. It is this third understanding of the term that is utilized in this paper.

A good orientation point is the distinction between analytic and synthetic predicates. A synthetic predicate consists of a single verb form that can convey grammatical information of tense, aspect, voice, mood, etc., e.g. *amabitur* 'will be loved' in Latin. An analytic predicate in contrast consists of two or more verb forms, whereby the locus of tense, aspect, voice, mood, etc. is largely with the auxiliary verbs.

(16) a.

```
                X2
           X1          X4
                  X3
```

Er *hat* das *gemacht.*   - Tense and aspect
he has   that done
'He did that.'

  b.

```
                X2
          X1           X3
```

Das *wird*   *gemacht.*   - Tense and voice
that is.being   done
'That is being done.'

  c.

```
                X2
          X1               X4
                    X3
```

Das *ist gemacht worden.*   - Tense, aspect, and voice
that has done   been
'That has been done.'
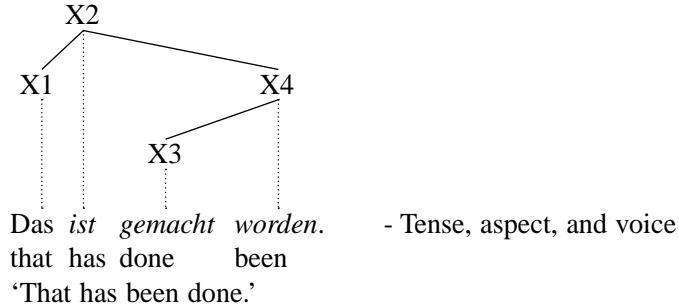
The verb complexes are in italics. The verbs that form these verb complexes together shall be called the *predicate*. *hat...gemacht* is the predicate in (16a), *wird gemacht* is the predicate in (16b), and *ist gemacht worden* is the predicate in (16c). Since these predicates consist of more than one verb form, they are analytic, not synthetic.

While the verb forms of the predicates in (16a-c) do not together qualify as constituents, they do all qualify as chains. This insight is the first major application of the chain concept. It motivates the following claim: THE WORDS CONSTITUTING A PREDICATE MUST FORM A CHAIN. The fact that predicates always form chains can be viewed as a result of the subcategorization requirements of the component words. When one verb subcategorizes for another, there is necessarily a dependency between the two. A finite auxiliary verb subcategorizes for an infinitival verb, and an infinitival auxiliary verb subcategorizes for another infinitival verb, etc. The cumulative result of these subcategorization requirements is that the verb complex forms a chain.

The validity of the claim shall now be established by surveying the word combinations that form predicates in German. It must be emphasized that the dependency trees assumed are consistent in relevant respects with the assumptions of numerous dependency grammarians, e.g. Kunze (1975), Matthews (1981), Engel (1982), Mel'čuk (1988), Schubert (1988), Starosta (1988), Pickering & Barry (1993), Jung (1995)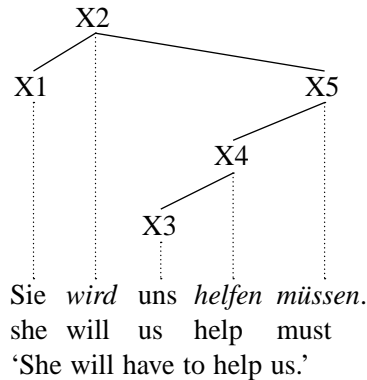, Heringer (1996), Groß (1999), Eroms (2000). In addition, the words assumed to constitute the predicate in the examples below are consistent with the predicates assumed by many in the linguistic tradition of the German language, e.g. Helbig & Buscha (1981), Engel (1982:124ff), Luhr (1993:97ff), Duden (1995:605ff), Zifonun, Hoffmann, & Strecker – henceforth ZHS – (1997:659ff), Hentschel & Weydt (2003:338ff).

In addition to auxiliaries of aspect and voice, modal auxiliaries are included in the predicate (Helbig & Buscha 1981:477, Engel 1982:124, Luhr 1993:97, Duden 1995:606, ZHS 1997:659;706f). The predicates are again in italics.

(17) a.

```
          X2
        /  |  \
      X1   |   X4
           |   |
           |  X3
           |   |
     Sie  muss  uns  helfen
     she  must  us   help
     'She has to help us.'
```

b.

```
          X2
        /  |   \
      X1   |    X5
           |    |
           |   X4
           |    |
           |   X3
           |    |
     Sie  wird  uns  helfen  müssen.
     she  will  us   help    must
     'She will have to help us.'
```

c.

```
          X2
        /  |      \
      X1   |       X5
           |       |
           |      X4
           |      |
           |     X3
           |      |
     Sie  hat  uns  helfen  müssen
     she  has  us   help    must
     'She had to help us.'
```

d.

```
          X2
        /  |      \
      X1   |       X5
           |       |
           |      X4
           |      |
           |     X3
           |      |
     Sie  muss  uns  geholfen  haben.
     she  must  us   helped    have
     'She must have helped us.'
```
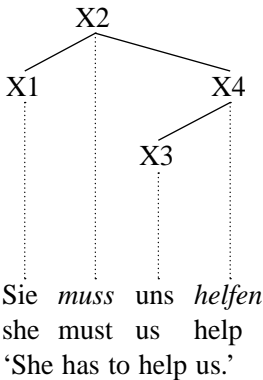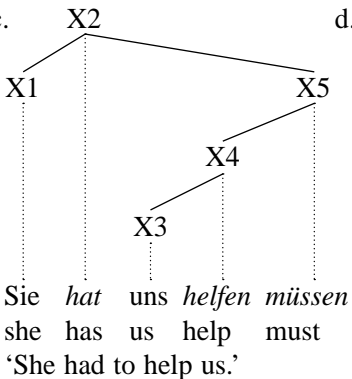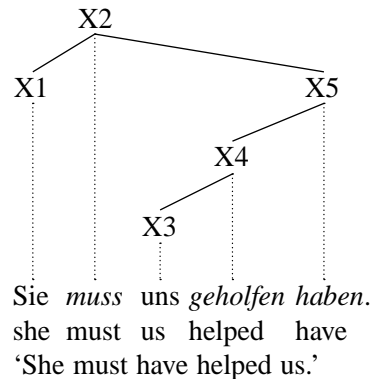
The predicative expressions of copular verbs are part of the predicate. Thus adjectives, nouns, prepositions, etc. can form part of the predicate (Helbig & Buscha 1981:479ff, ZHS 1997:702, Hentschel & Weydt 2003:340f).

(18) a.

```
              X2
      X1          X3    X4


      Sie wird    heute  müde.
      she becomes today tired
      'She is getting tired today.'
```

b.

```
           X2
      X1  X3          X5

                  X4


      Sie ist heute müde geworden.
      she is  today tired  become
      'She has become tired today.'
```

(19) a.

```
        X2
      X1            X5

              X3  X4


      Er ist ein guter Freund.
      he is a   good  friend
      'He is a good friend.'
```

b.

```
        X2
      X1              X6

                 X5

              X3  X4


      Er wird ein guter Freund sein.
      he will a   good  friend  be
      'He will be a good friend.'
```

(20) a.

```
          X2
      X1      X3

                  X5

              X4


      Du warst auf dem Dach.
      you were on  the roof
      'You were on the roof.'
```

b.

```
        X2
      X1                  X7

                     X6

               X3

                   X5

               X4


      Er muss auf dem Dach gewesen sein.
      he must on  the roof been    have
      'He must have been on the roof.'
```

The *zu*-infinitives of modality verbs appear in the predicate (Engel 1982:125, Luhr 1993:100f, Duden 1995:606):[13]

(21)
```
              X2
       ┌───┄┄┄───────┐
      X1             X4
       ┆         ┌───┘
       ┆        X3
       ┆         ┆
      Sie  scheint traurig zu sein.
      she  seems   sad    to be
      'She seems to be sad.'
```

(22)
```
           X2
       ┌───┴───┐
      X1       X3
       ┆        ┆
      Er   vermag zu schlafen.
      he   is.able to sleep
      'He is able to sleep.'
```
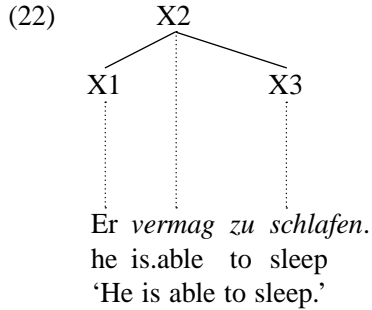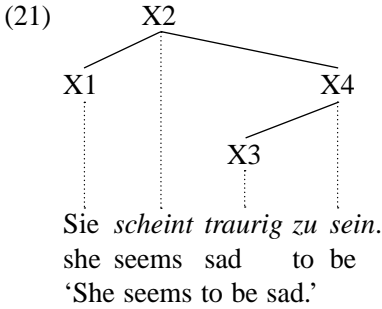
The separable prefixes of phrasal verbs appear in the predicate (Helbig & Buscha 1981:478, Engel 1982:125, Lühr 1993:102, Duden 1995:606, Hentschel & Weydt 2003:339):

(23)
```
            X2
       ┌───┬───┬───┐
      X1   X3  X4
       ┆    ┆   ┆
      Sie steht früh auf.
      she stands early up
      'She gets up early.'
```

(24)
```
           X2
       ┌──┬─┴─┬──┐
      X1  X3 X4 X5
       ┆   ┆  ┆  ┆
      Er hörte uns nicht zu.
      he heard us  not  to
      'He listened to us.'
```
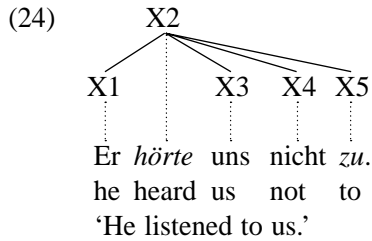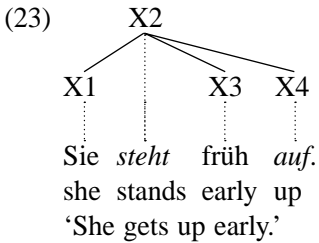
Certain obligatory reflexive pronouns form part of the predicate (Helbig & Buscha 1981:477, Lühr 1993:102, Hentschel & Weydt 2003:339):

(25)
```
              X2
       ┌───────────┐
      X1           X4
       ┆        ┌──┘
       ┆       X3
       ┆        ┆
      Ihr  habt euch    erkältet.
      you  have yourselves caught.a.cold
      'You have caught a cold.'
```

(26)
```
              X2
       ┌───────────┐
      X1           X5
       ┆        ┌──┘
       ┆       X4
       ┆     ┌──┘
       ┆    X3
       ┆     ┆
      Sie wird sich entspannen können.
      she will herself relax      can
      'She will be able to relax.'
```
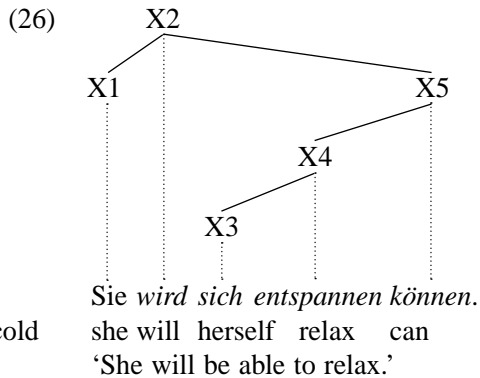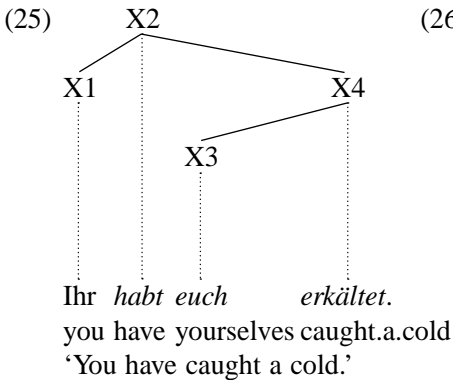
The reflexive pronoun of the middle construction is part of the predicate (Lühr 1993:102):

(27)

```
          X2
        / |  \
      X1  X3  X4
      ┊   ┊   ┊
     Das lässt sich machen.
     that lets itself do
     'That can be done.'
```

(28)

```
          X2
        /     \
      X1       X5
      ┊       / \
         X3  X4
         ┊   ┊
     Alles hat sich verkaufen lassen.
     all   has itself sell    let
     'It was possible to sell everything.'
```
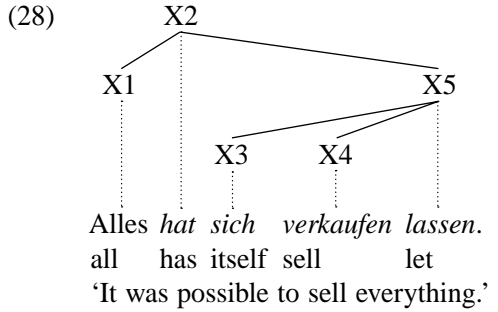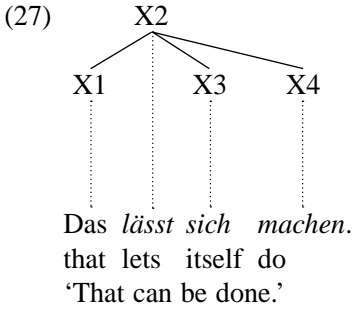
Resultative adjectives form part of the predicate (Helbig & Buscha 1981:478, Luhr 1993:102):

(29)

```
          X2
        / |  \
      X1  X3  X4
      ┊   ┊   ┊
     Das macht mich glücklich.
     that makes me   happy
     'That makes me happy.'
```

(30)

```
            X3
          /    \
        X2      X5 X6
       / \     / ┊
      X1  X4
      ┊   ┊
     Das Kind schlägt die Ratten tot.
     that child hits    the rats  dead
     'That child kills rats.'
```
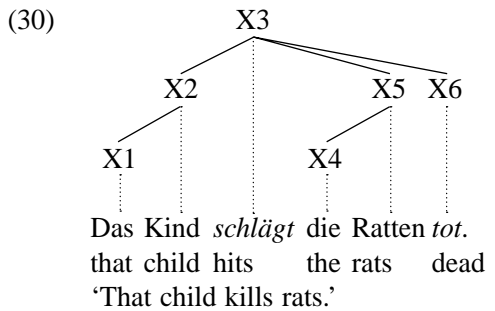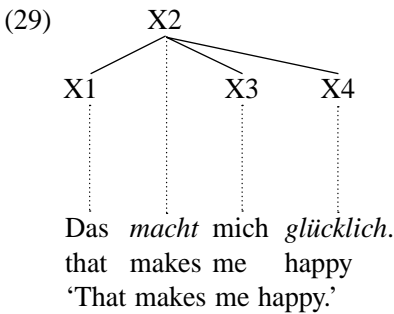
The infinitives of aci-constructions form part of the predicate (Duden 1995: 606):

(31)

```
          X2
        / |  \
      X1  X3  X4
      ┊   ┊   ┊
     Sie hört uns spielen.
     she hears us  play
     'She hears us playing.'
```

(32)

```
          X2
        /     \
      X1       X5
      ┊       / \
         X3  X4
         ┊   ┊
     Sie darf uns schlafen sehen.
     She may us  sleep    see
     'She is allowed to see us sleep.'
```
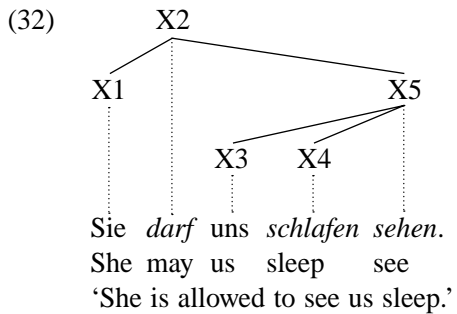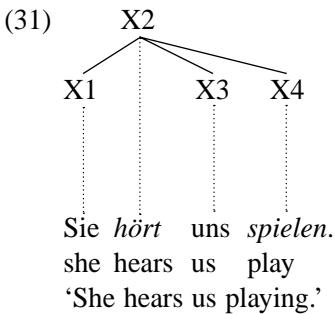
Causative verbs and their infinitive complements are in the predicate (ZHS 1997:705f):

(33)

```
              X2
      X1              X5
                  X4
              X3
```

Sie *lässt* das Papier *lesen*.
She let   the paper read
'She is having the paper read.'

(34)

```
          X2
   X1                   X5
          X3      X4
```

Er *hat* uns *zu bleiben gezwungen*.
he has us to stay   forced
'He has forced us to stay.'
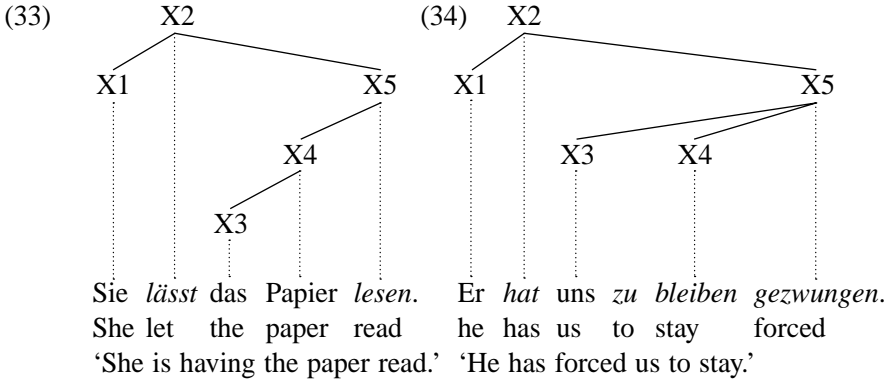
The *Scheinsubjekt* 'false subject' can be viewed as forming part of the predicate:

(35)

```
        X2
  X1          X4   X5
          X3          X6
```

Es waren zwei Männer *mit uns*.
it was   two   men   with us
'There were two men with us.'

(36)

```
     X2
 X1               X6
              X5
          X4
      X3
```

Es muss eine Ausrede *gegeben haben*.
it must an   excuse   given   have
'There must have been an excuse.'
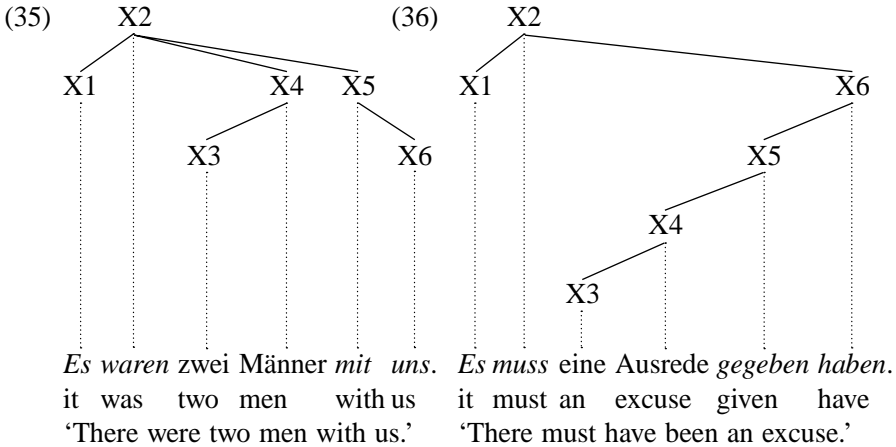
The elements of *Funktionsverbgefügen* 'function verb constructions' are part of the predicate (Lühr 1993:102ff, ZHS 1997:703f.):

(37) a.

```
      X2
 X1              X6
        X3     X5
            X4
```

Sie *hat* uns einen *Bericht erstattet*.
she has us a   report given
'She has given us a report.'

b.

```
           X3
   X2               X6
 X1           X4  X5
```

Ein *Bericht ist* uns *erstattet worden*.
a   report is us given   been
'A report has been given to us.'

(38) a.

```
            X2
         /  |   \
       X1       X5
        ⋮        |
                X4
              /  ⋮
            X3
             ⋮    ⋮    ⋮
```

Jemand *wird* den *Nachweis erbringen.*
someone will the confirmation produce
'Someone will produce the confirmation.'

b.

```
            X3
         /   |  \
       X2       X6
      /  ⋮       |
    X1           X5
     ⋮         /  ⋮
             X4
              ⋮   ⋮   ⋮
```

Der *Nachweis*   *wird* uns *erbracht werden.*
the confirmation will us produced be
'The confirmation will be produced for us.'

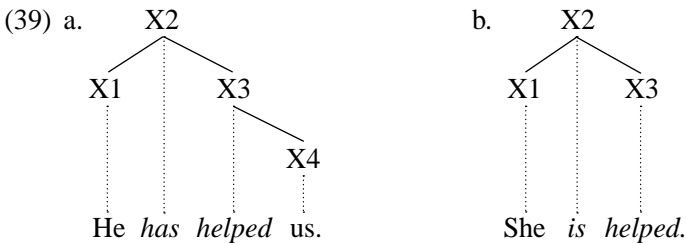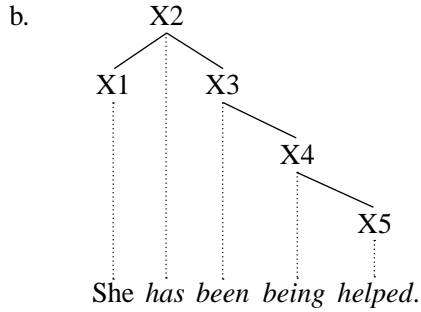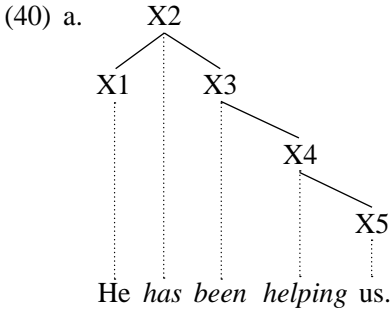The important aspect about all these predicates is that the words constituting the predicate form a chain in each case. There are some noteworthy aspects of the examples. First, note that even the predicates with *Scheinsubjekte* (35-36), whereby the false subject appears in the canonical subject position, form chains. Second, note that the predicates of the function verb constructions (37-38) form chains regardless of whether they appear in the passive or active voice. When the active occurs, the noun of the predicate appears as the object and forms a chain with its head, and when the passive occurs, the noun of the predicate appears as the subject and still forms a chain with its head. Third, note that the pre-noun determiners in (37-38) do not appear in the predicate – more on this below.

To my knowledge, there are no data that challenge the chain requirement on predicates. In fact I am incapable of imagining what the structure of a sentence might look like (and what it would mean) where the predicate does not form a chain. The discussion shall now examine predicates in English. It is clear that the predicates of English also always form chains. Auxiliaries of aspect and voice form a chain with the infinitival verbs they govern:

(39) a.

```
        X2
      /  |  \
    X1      X3
     ⋮      |  \
           X4
     ⋮   ⋮    ⋮
```

He *has helped* us.

b.

```
        X2
      /     \
    X1        X3
     ⋮         ⋮
```

She *is helped.*

The auxiliaries of the progressive form chains with their infinitival complements:

(40) a.

```
            X2
          /    \
        X1      X3
                  \
                   X4
                     \
                      X5
```

He *has been helping* us.

b.

```
            X2
          /    \
        X1      X3
                  \
                   X4
                     \
                      X5
```

She *has been being helped.*

Modal auxiliaries take part in predicates:

(41)

```
          X2
        /    \
      X1      X3
                \
                 X4
```

We *will have rested.*

(42)

```
            X3
          /    \
        X2      X4
        /         \
      X1           X5
```
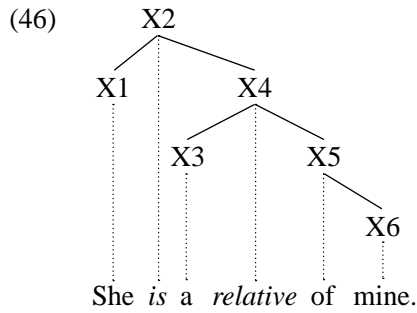
The story *should be changed.*
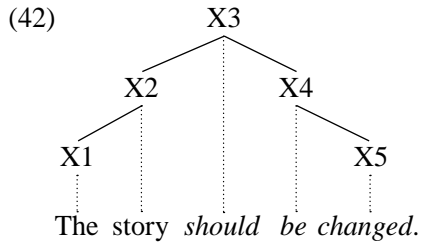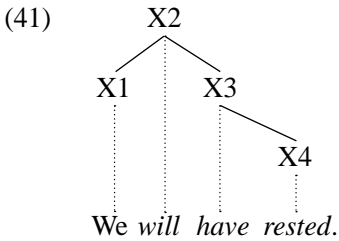
The predicative expressions of copular verbs qualify as parts of the predicate:

(43)

```
          X2
        /  |  \
      X1       X3
```

He *seems upset.*

(44)

```
          X2
        /    \
      X1      X3
                \
                 X4
```

She *is becoming angry.*

(45)

```
          X2
        /    \
      X1      X4
             /
           X3
```

They *are* good *players.*

(46)

```
          X2
        /    \
      X1      X4
             /  \
           X3    X5
                   \
                    X6
```

She *is* a *relative* of mine.

(47)

```
        X2
       /  \
     X1    X3
            \
             X4
              \
               X6
              /
            X5
```

It *will be under* the bed.

(48)

```
        X2
       /  \
     X1    X3
            \
             X4
```

That *is from hell*.
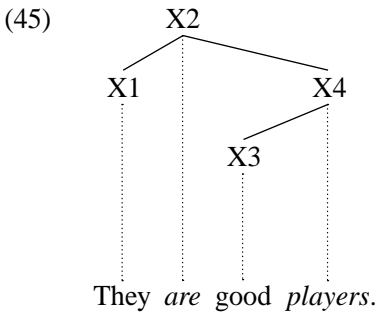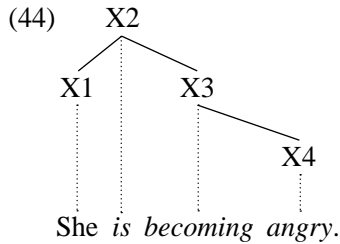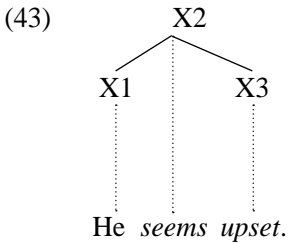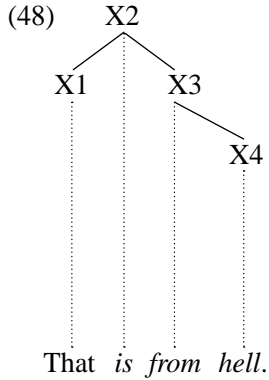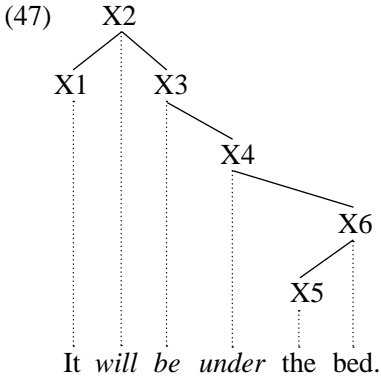
to-infinitives generally enter into the predicate:

(49)

```
        X2
       /  \
     X1    X3
            \
             X4
```

He *wants to understand*.

(50)

```
              X3
             /  \
           X2    X4
          /        \
        X1          X5
                      \
                       X6
```

The window *is to be fixed*.
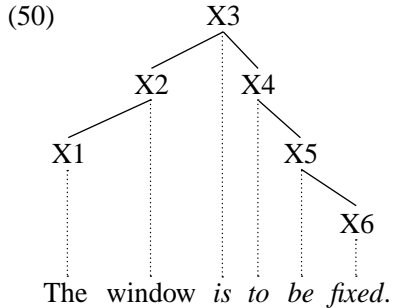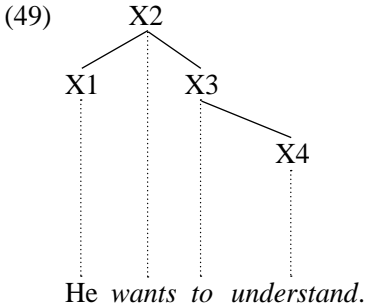
The particles of phrasal verbs form part of the predicate:

(51)

```
        X2
       /  \
     X1    X3
            \\
            X4X5
                \
                 X6
```

He *was picked up* at noon.

(52)

```
        X2
       /  \
     X1    X3
            \
             X4
              \
               X5
              /|  \
            X7  X8
            /
          X6
```

Fred *will have to put* his sweater *on*.
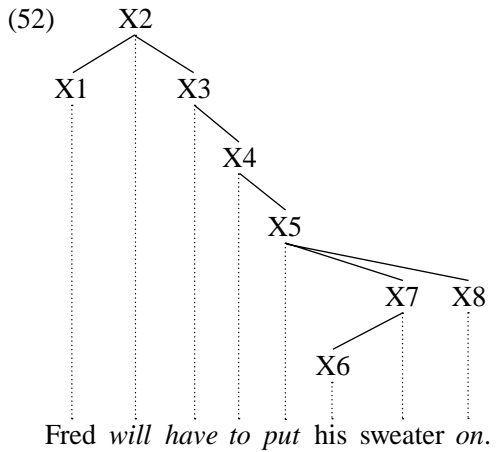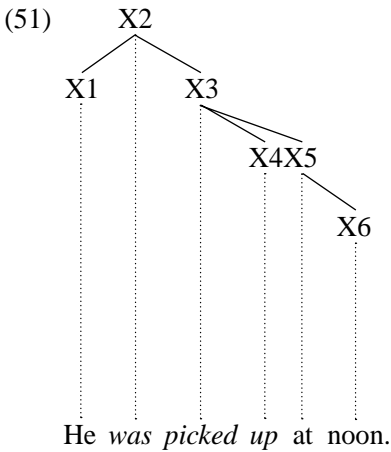
Resultative adjectives are part of the predicate:

(53)

```
                X3
        X2       |    X4   X5
    X1   |       |    |    |
    |    |       |    |    |
   The music  makes me  happy.
```

(54)

```
                X2
    X1    |          X4   X5
    |     |      X3   |    |
    |     |      |    |    |
    He scrubbed his tongue raw.
```
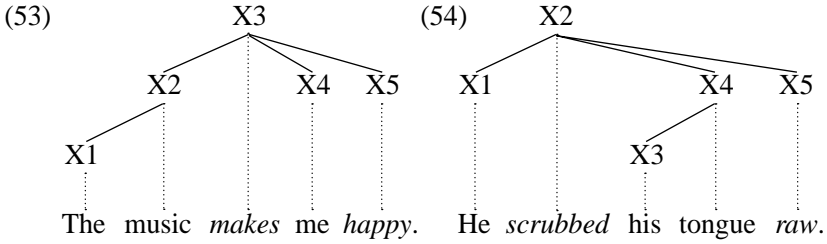
The verbs of aci-constructions are included in the predicate:

(55)

```
       X2
   X1   X3   X4
   |    |    |
   We  saw  him  leave.
```

(56)

```
        X2
   X1    X3
   |      \
   |    X4  X5
   |    |   |
  They will hear us laugh.
```
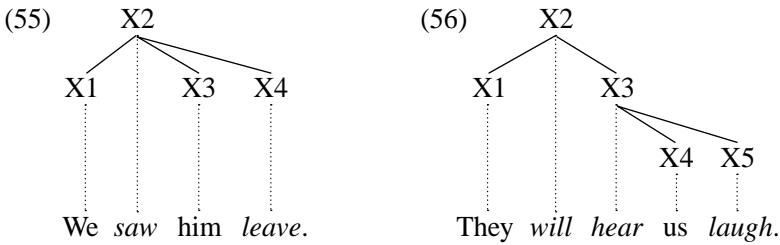
Causative verbs and their complement infinitivals are part of the predicate:

(57)

```
       X2
   X1    X3
   |      \
   |    X4  X5
   |    |   |
  She will make him read.
```

(58)

```
       X2
   X1    X3
   |       \
   |       X4
   |        \
   |        X5
   We were forced to go.
```
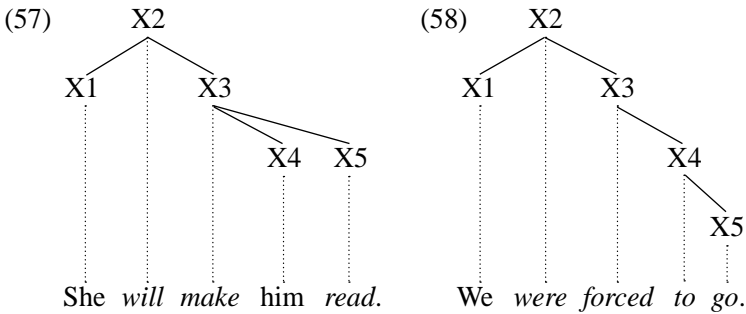
Many expletives are counted as part of the predicate:

(59)

```
       X2
   X1    X3
   |       \
   |        X5
   |       /
   |      X4
  There has been a disagreement.
```

(60)

```
       X2
   X1    X3
   |       \
   |        X5
   |       /
   |      X4
  There can be no doubt.
```
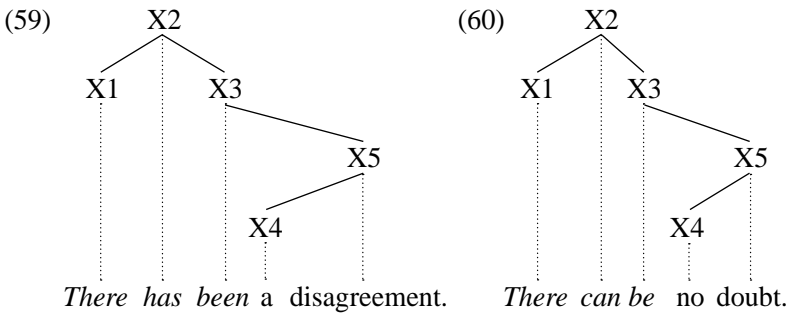
And finally, the elements of function verb constructions also qualify as parts of the predicate in English.

(61)
```
        X2
       /  \
     X1    X3
            \
             X4
            /
          X3
```
He *will* *make* a *statement*.

(62)
```
          X3
         /  \
       X2    X4
      /        \
    X1          X5
                  \
                   X6
```
The bags *should* *come* *to* *use*.

(63)
```
            X3
           /  \
         X2    X4
        /     /
      X1    X5
              \
               X6
```
Her things *were* *brought* *in* *order*.

(64)
```
        X2
       /  \
     X1    X3
            \
             X4
```
She *must* *take* *inventory*.
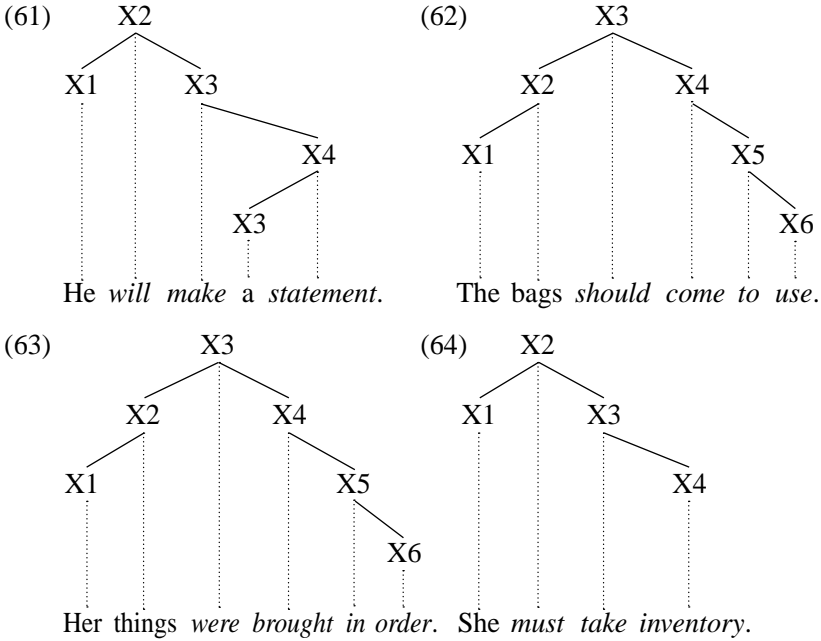
While this list of predicates is not complete, it suffices to demonstrate that the words forming predicates always occur as chains in the syntax. This claim is valid across English and German (and I suspect across other languages as well). The merit of the claim shall become more evident in the next section, where it is shown that semantic units always appear as chains in the syntax. The behavior of idioms illustrates this point well.
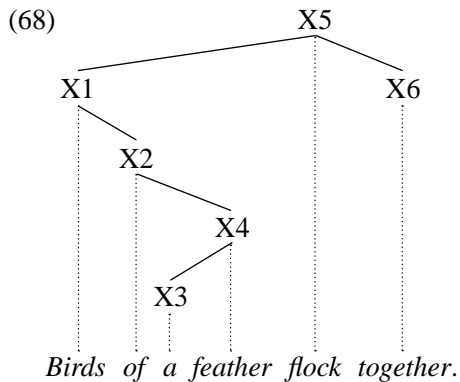
The heterogeneous nature of predicates should be evident from the examples above. Infinitival verbs of all sorts, nouns, adjectives, particles, etc. can all be parts of the predicate. Since the specific syntactic status of these constituents varies, they will behave differently with respect to certain diagnostics, e.g. substitution and omission. With respect to other diagnostics employed in German however – e.g. extraposition, partial VP fronting, scrambling, pied-piping, intonation breaks – they behave in a uniform manner.[14] These tests are widely employed as diagnostics for coherence – see Bech (1955). Obligatorily coherent constructions always include elements of the predicate.

6. Idioms

O'Grady (1998) introduces the chain concept in order to account for the architecture of idioms in the syntax. He (1998:284) presents the following constraint on idioms:

Continuity Constraint: An idiom's component parts must form a chain.

O'Grady uses idioms like the following to illustrate the predictive value of the constraint. The component words of the idioms are in italics.

(65)

X3
X2   X4
X1

All hell broke loose.

(66) X2

X1   X3 X4
                X5
                  X6
                    X8
                   X7

It is hard to *lay down the law*.

(67)   X2

X1   X4   X5
        X3

We *left no stone unturned*.

(68)   X5

X1   X6
        X2
            X4
        X3

Birds of a feather flock together.
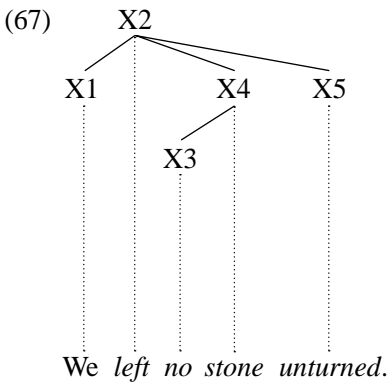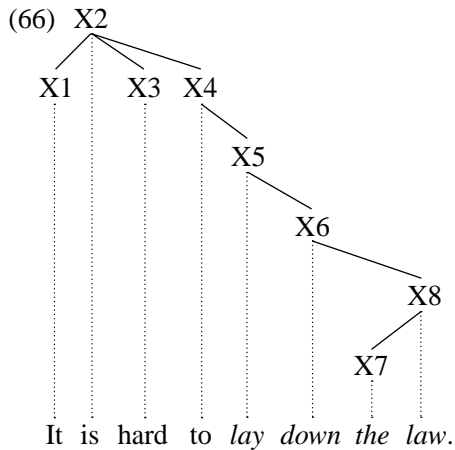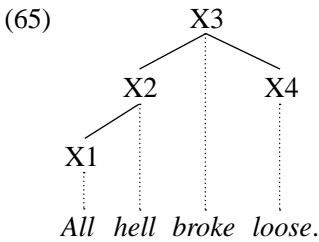
The components of the idioms are in italics. In each case, these components form a chain. Note that the idioms in (65) and (68) encompass the entire sentences.

While O'Grady's Continuity Constraint makes an accurate prediction with cases such as (65) - (68), it fails with the following, somewhat altered cases:

(69) X3 X2 X4 X1 X5 X6

All hell seemed to *break loose*.

(70) X3 X2 X4 X1 X5 X6 X7 X8

The law can be hard to *lay down*.

(71) X3 X2 X4 X1 X5

No stone was *left unturned*.

(72) X5 X1 X6 X2 X7 X4 X8 X3

Birds of a feather like *to flock together*.
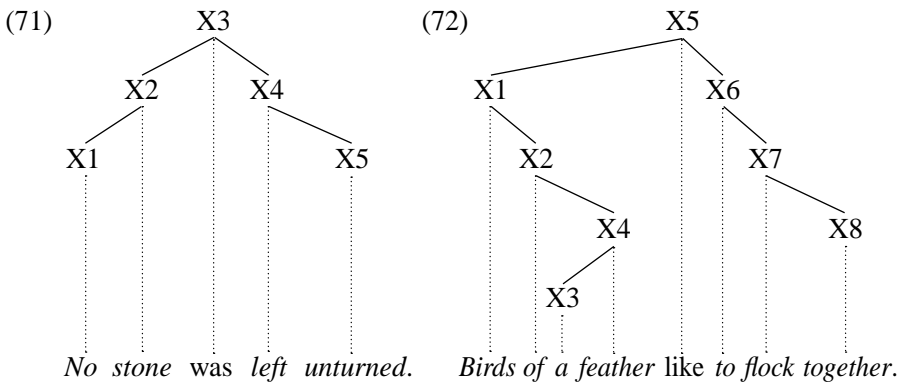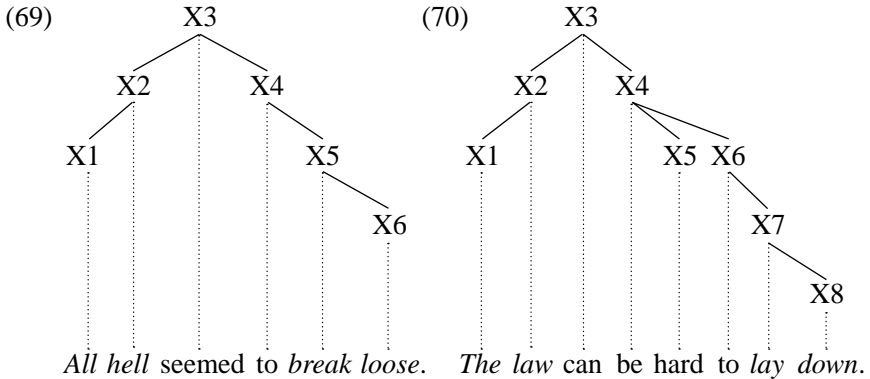
These idioms no longer form chains. In each case, one or more non-idiom verbs interrupt the relevant chain. To address such cases, O'Grady (1998:288) must stipulate that the "Continuity Constraint is intended as a restriction on the organization of idioms as lexical entries, not on their interaction with other phenomena". This stipulation is consistent with Bresnan's (1982:45ff) stance tha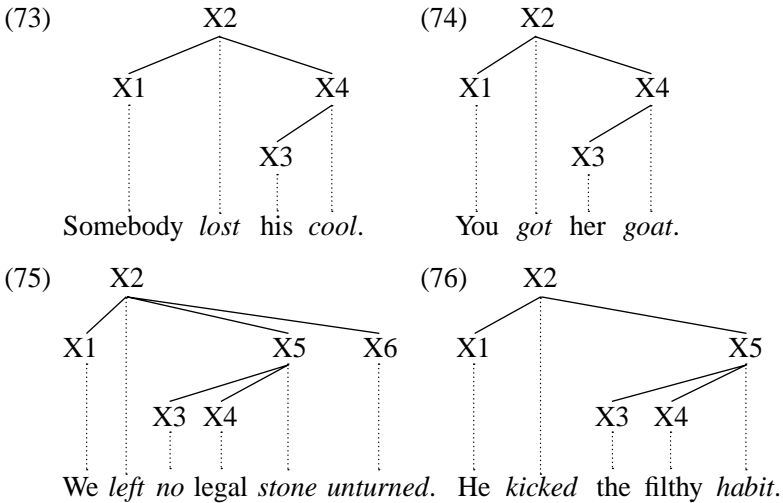t idiom chunks exist as units only at the level of lexical representation. The stipulation is, though, less than satisfying since it effectively negates the aspect of the Continuity Constraint that is most appealing, namely its ability to establish a connection between the semantics and surface syntax of idioms.

In view of the discussion of predicates in the previous section, O'Grady's stipulation is no longer necessary. The auxiliary verbs that interrupt the idiom chains are part of the predicate. Therefore one need merely assume, as ZHS (1997:722f) do, that THE PREDICATE INCORPORATES ALL THE COMPONENT PARTS OF THE IDIOM. Support for this view of idioms is in the semantics. Consider auxiliary verbs in this regard. The auxiliary *have* of aspect, for instance, is semantically empty; it is a function word bearing grammatical information only. Now compare the verb *have* in the idiom *have a cow*. It too is semantically impoverished and serves mainly to convey grammatical information. Hence both the compo-

nent parts of idioms and auxiliary verbs can be semantically empty. In the case of standard predicates, the actual semantic content is located in the main verb or below. In the case of true idiom predicates, the locus of the semantic content is evenly spread across all the component parts of the idiom.[15, 16]

   An important trait of idioms is that they often include the noun of an NP, but exclude the pre-noun elements of that NP, i.e. determiners and attributive adjectives. Fellbaum (1993:273), Pulman (1993:252), Nunberg et al. (1994: 500ff), O'Grady (1998:282) produce examples like the following to illustrate the manner in which pre-noun elements appear outside the idiom:

```
(73)          X2                 (74)      X2
        _____|_____                 _____|_____
      X1            X4              X1          X4
       :           /                 :         /
       :         X3                  :       X3
       :          :                  :        :
   Somebody  lost his cool.     You  got her goat.
```

```
(75)    X2                       (76)    X2
     ___|_____                  ___|_____
   X1      |    X5   X6             X1             X5
    :      |   /  \   :              :            /  \
    :      |  X3  X4  :              :          X3  X4
    :      :   :   :  :              :           :   :
   We  left no legal stone unturned.  He kicked the filthy habit.
```

The pre-noun possessive adjectives *his* in (73) and *her* in (74) are variable, e.g. *You got her/his/our/everybody's goat*. The pre-noun adjectives in (75) - (76) are also variable, e.g. *He kicked the terrible/old/pesky/debilitating habit.* This variability is evidence that the pre-noun positions in such cases are outside of the idioms. This observation is not a problem for the chain concept, since nothing in the definition requires that the relevant chains reach below the nouns. If, however, a DP, instead of an NP, analysis of noun phrases were assumed, then these cases would pose a problem. The DP analysis would force an incorrect prediction in (73) - (74), namely that the determiners appear in the idioms. Amongst dependency grammars, the NP analysis dominates, yet there are a few – e.g. Hudson (1984, 1990), Lobin (1993, 1995), Pickering & Barry (1993), Lombardo & Lesmo (2000) – who assume DPs. The systems of these linguists are hence challenged by data such as (73)-(76). The same difficulty obtains for many constituency grammars, where the DP analysis is much more widespread – more on this in section 8.

   The accomplishment of O'Grady's Continuity Constraint and the understanding of predicates put forth here is not so much in the word combinations

that are predicted to form idioms, but rather it lies with the word combinations that are predicted to not form idioms. No idiom may consist of, say, a verb and a pre-noun adjective to the exclusion of the noun, or a subject NP and an object NP to the exclusion of the (main) verb, or a subject NP and a PP complement of the verb to the exclusion of the (main) verb.

(77) a. verb   b.   verb   c.   verb

　　　　noun   subject NP   object NP   subject NP   PP
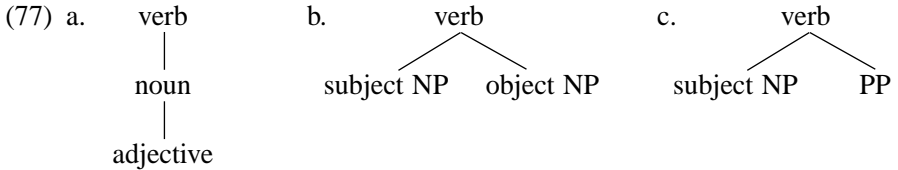
　　　adjective

In (77a), the verb and the adjective to the exclusion of the noun do not form a chain; in (77b), the subject NP and the object NP to the exclusion of the verb do not form a chain; and in (77c), the subject NP and the PP to the exclusion of the verb do not form a chain. One can search idiom dictionaries in vain for such idioms; they simply do not exist.

The discussion in this section and the previous one has brought to light an important accomplishment of the chain concept. Certain units, i.e. predicates, that have been viewed primarily as semantic in nature – due to the fact that they do not qualify as syntactic constituents – now receive a concrete expression in the syntax. In this manner, a theory of semantic compositionality becomes conceivable in the syntax.

7. Ellipsis

The discussion in the previous two sections has established the value of the chain concept with respect to a theory of predicates. The following sections shall demonstrate that the concept is not limited to just predicates in its applicability, but rather it is also an essential component of a theory of ellipsis. Ellipsis mechanisms such as gapping, VP-ellipsis and pseudogapping, stripping, and answer fragments are all sensitive to chains, i.e. the elided material must correspond to a chain in the antecedent structure.

7.1　Gapping

The elided material of gapping always corresponds to a chain. The following example from Ross (1970:250) is often used to illustrate the strings that gapping can elide.

(78)

```
                        X2
                      ╱
        X1         X3
                     ╲
                        X4
                          ╲
                            X5
                              ╲
                                X6
                                  ╲
                                    X7
                                      ╲
                                        X8
                                          ╲
                                            X9
                                          ╱
                                      X10
```
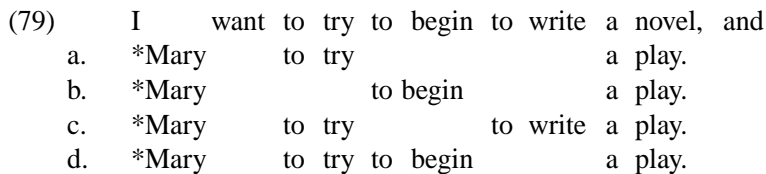
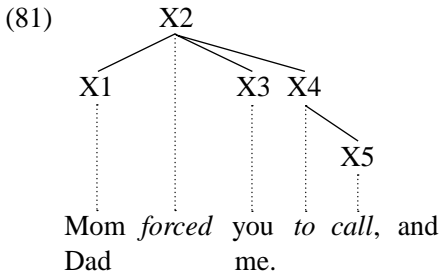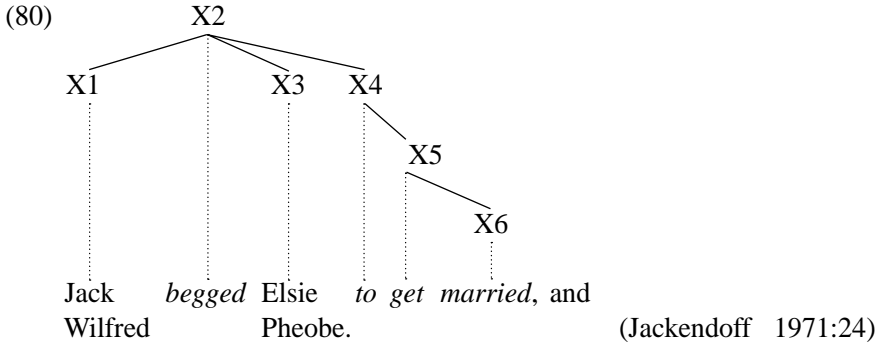|		I	want	to	try	to	begin	to	write	a	novel,	and
a.		Mary								a	play.	
b.		Mary						to	write	a	play.	
c.		Mary				to	begin	to	write	a	play.	
d.		Mary		to	try	to	begin	to	write	a	play.	
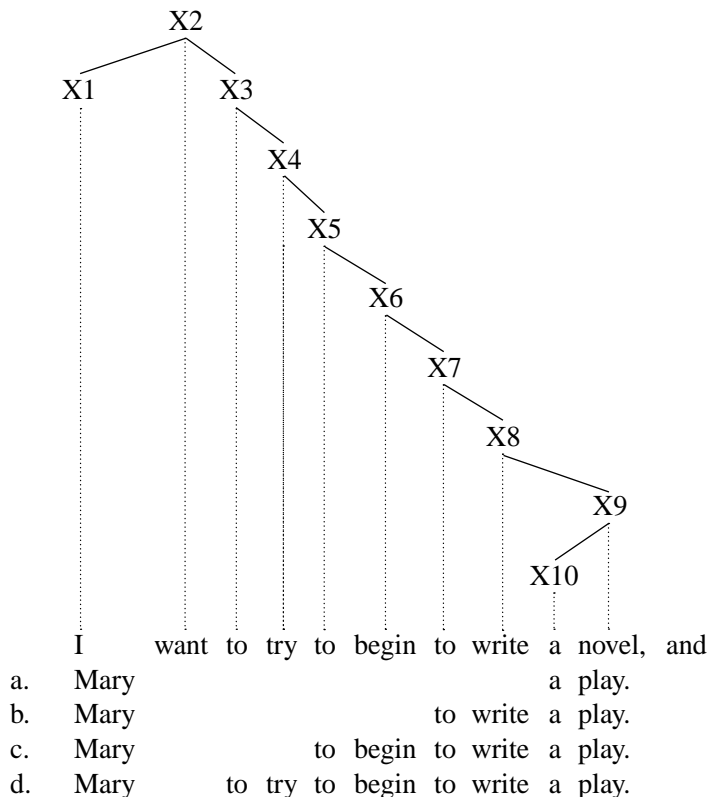
In each instance, the elided verb complex corresponds to a chain in the antecedent clause. If the elided material does not correspond to a chain, ungrammaticality obtains:

(79)

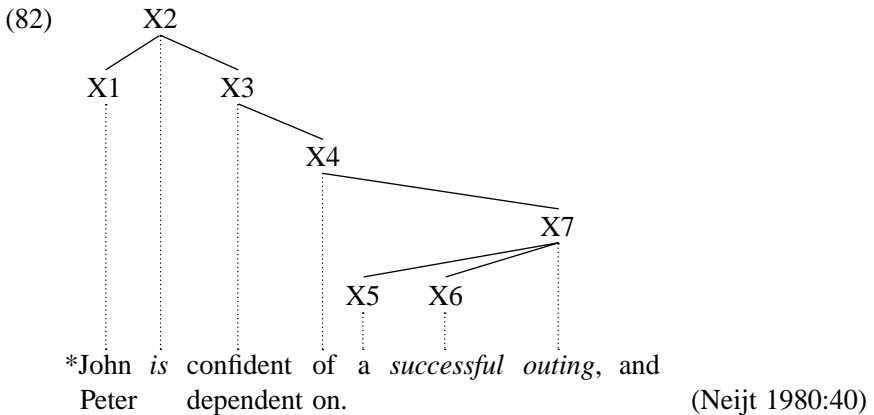|		I	want	to	try	to	begin	to	write	a	novel,	and
a.		*Mary		to	try					a	play.	
b.		*Mary				to	begin			a	play.	
c.		*Mary		to	try			to	write	a	play.	
d.		*Mary		to	try	to	begin			a	play.	

In each of (79a-d), the elided string does not qualify as a chain because at least one of the links is missing, meaning that link is not elided too.
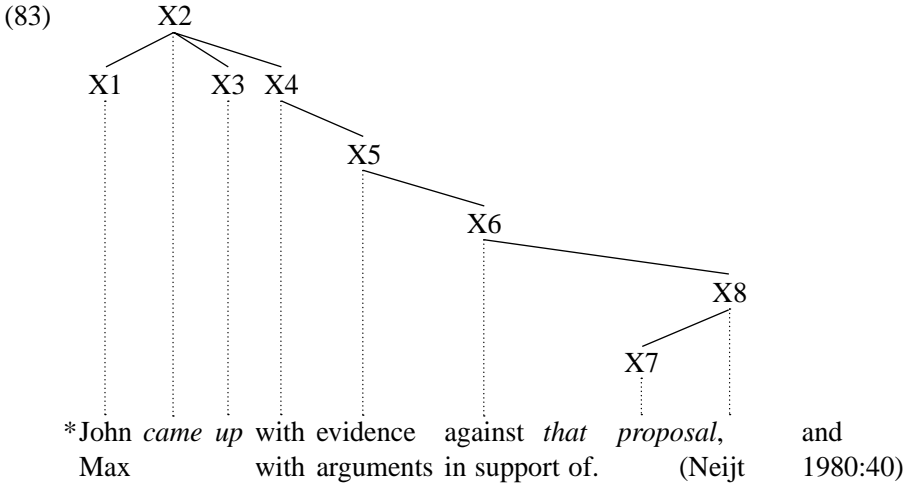
   One should note that an alternative explanation of (79) in terms of gap contiguity is insufficient. The fact that the gaps in (79) are non-contiguous is not relevant. Non-contiguous gaps can be fine if the elided material corresponds to a chain.

(80)

```
              X2
         ╱    │    ╲
      X1     X3    X4
                     ╲
                      X5
                        ╲
                         X6

     Jack   begged Elsie  to get married, and
     Wilfred        Pheobe.                    (Jackendoff  1971:24)
```

(81)

```
            X2
        ╱   │   ╲
      X1   X3   X4
                  ╲
                   X5

     Mom  forced you  to call, and
     Dad          me.
```
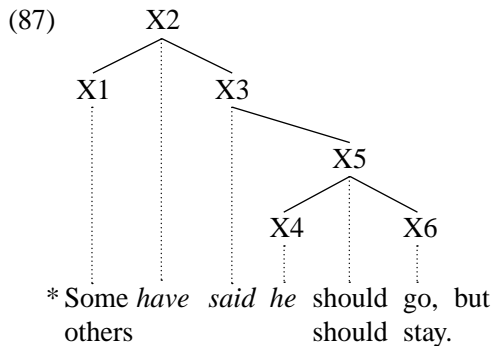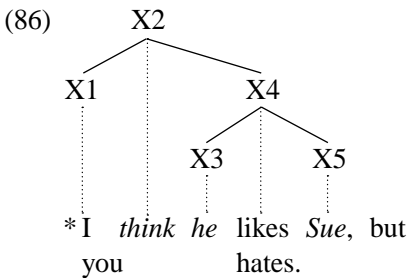
These acceptable sentences containing discontinuous gaps illustrate that gapping does not require the elided material to be continuous, but rather it is the chain requirement that is important.

   Neijt (1980) discusses the following examples; each is disallowed because the elided material does not form a chain.

(82)

```
           X2
       ╱   │   ╲
     X1   X3
             ╲
              X4
                 ╲
                  X7
                ╱    ╲
            X5    X6

     *John  is confident  of  a  successful  outing, and
      Peter    dependent on.                    (Neijt 1980:40)
```

(83)

```
            X2
       /    |    \
      X1   X3    X4
                    \
                    X5
                       \
                       X6
                          \
                          X8
                         /
                       X7
```

*John *came up* with evidence against *that proposal*,   and
  Max   with arguments in support of.   (Neijt   1980:40)

Sentences (82) - (83) have part of the elided material appearing below an overt preposition. The same sort of ungrammaticality occurs if part of the gap appears below a noun or finite verb.

(84)

```
       X2
     /    \
   X1     X4
          /
        X3
```

*Bill *drank this* beer, and
  Jill   wine.

(85)

```
       X2
     /    \
   X1     X4
         /   \
       X3    X5
               \
               X6
```

* Kurt *likes* the picture of *us*, and
  Susi   the portrait of.[17]

(86)

```
       X2
     /    \
   X1     X4
         /  \
       X3   X5
```

*I   *think he* likes *Sue*, but
  you   hates.

(87)

```
       X2
     /    \
   X1     X3
             \
             X5
            /  \
          X4   X6
```

* Some *have said he* should go, but
  others   should stay.
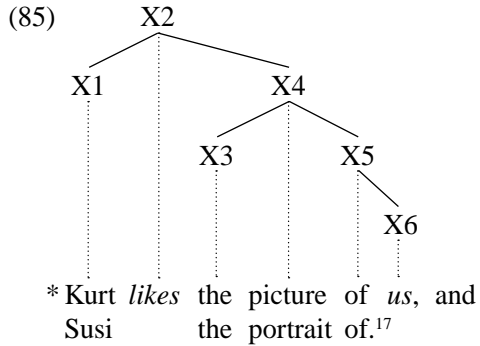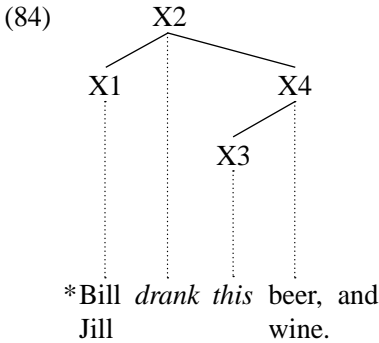
Sentence (84) is disallowed on the indicated reading where *this* is elided.

While examples (78) - (87) demonstrate that the elided material of gapping must correspond to a chain, this requirement alone is not sufficient. In other words, the chain requirement is a necessary, but not a sufficient criterion for gapping. Some cases of gapping are unacceptable even though the elided material does correspond to a chain.

(88)

```
                    X2
        X1                    X4
                         X3        X5
                                       X6

     * Bill  destroyed  an article  about  sex,    and
       Peter                               about   politics.   (Neijt 1980:136)
```
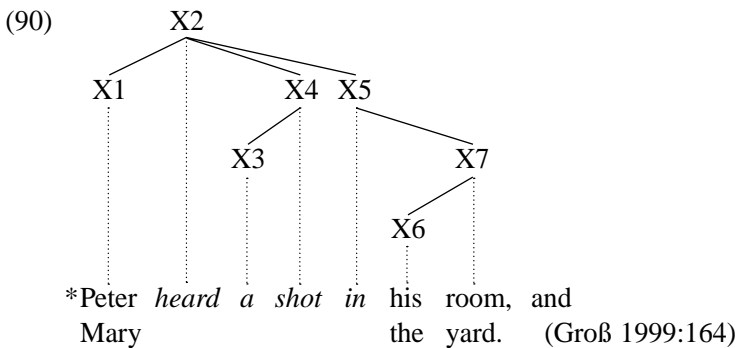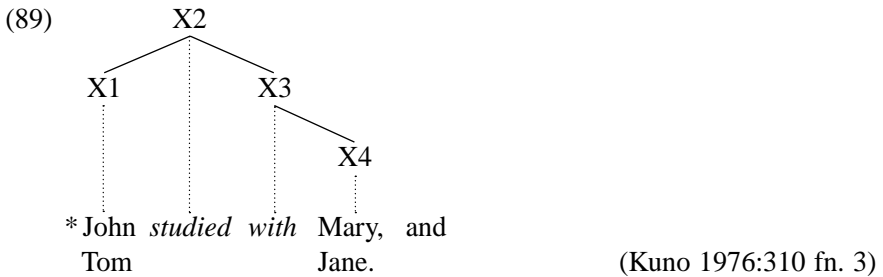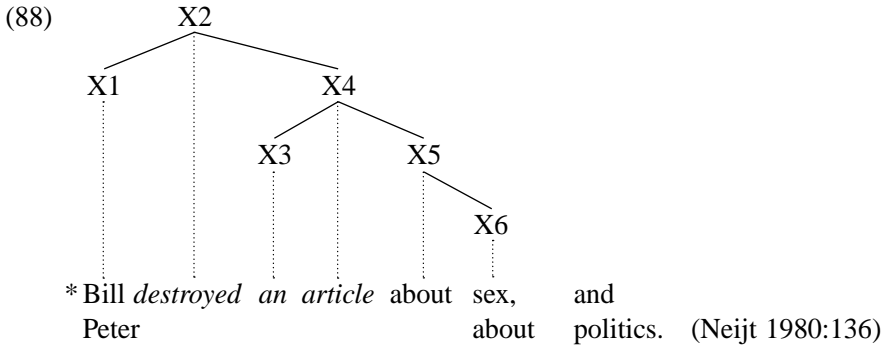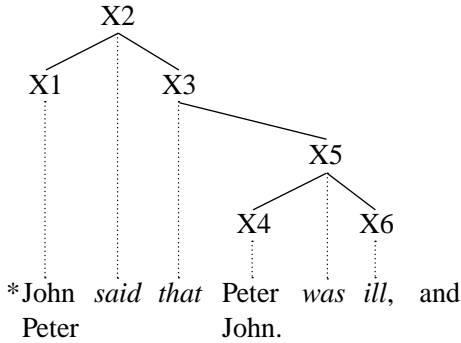
(89)

```
                X2
        X1            X3
                           X4

     * John  studied  with  Mary,   and
       Tom                  Jane.                          (Kuno 1976:310 fn. 3)
```

(90)

```
            X2
     X1           X4  X5
                X3          X7
                         X6

    *Peter  heard  a  shot  in  his  room,  and
     Mary                       the  yard.    (Groß 1999:164)
```

(91)

```
            X2
          /    \
        X1      X3
                 \
                  X5
                 /  \
               X4    X6
```

　*John　*said*　*that*　Peter　*was*　*ill*,　and
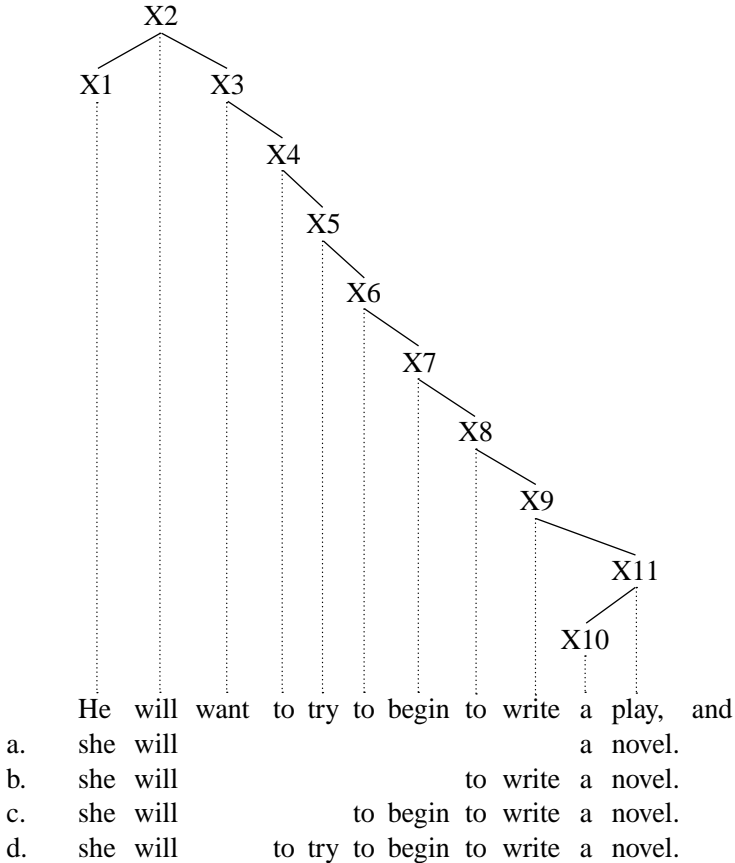　　Peter　　　　　　　John.　　　　　(Neijt 1980:129)

In each of (88) - (91), the elided material corresponds to a chain. Therefore other factors beyond the chain requirement play a role in determining which material gapping can elide. For instance, example (88) is disallowed because the gap has cut into the NP *an article about sex*; examples (89) - (90) are disallowed because the gaps have cut into the PPs *with Mary* and *in his room*; and example (91) is disallowed because the gap has cut into the finite clause *Peter was ill*. Since the purpose of this paper is to establish the validity of the chain concept, the discussion shall not attempt to identify the further limitations on the chains that gapping can elide. It suffices to acknowledge that gapping may not elide non-chains.

7.2　*Pseudogapping*

Pseudogapping, a particular manifestation of VP-ellipsis, also requires the ellipsis to correspond to a chain. The following example parallels Ross' (1970: 52) gapping example from the previous section.
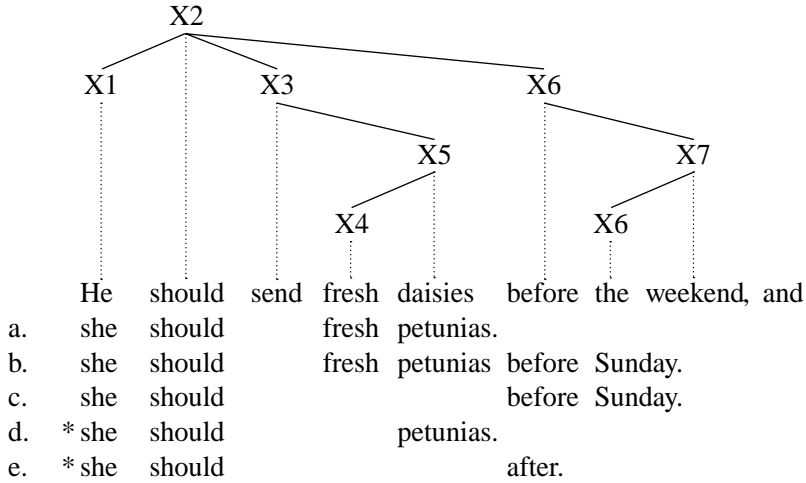
(92)

X2
X1   X3
X4
X5
X6
X7
X8
X9
X11
X10

	He	will	want	to	try	to	begin	to	write	a	play,	and
a.	she	will								a	novel.	
b.	she	will						to	write	a	novel.	
c.	she	will				to	begin	to	write	a	novel.	
d.	she	will		to	try	to	begin	to	write	a	novel.	

In each of (92a-d), the ellipsis corresponds to a chain. The following example illustrates the ungrammaticality that results when the ellipsis does not correspond to a chain:

(93)

		He	will	want	to	try	to	begin	to	write	a	play,	and
a.	*she	will		to	try					a	novel.	
b.	*she	will		to	try			to	write	a	novel.	
c.	*she	will		to	try	to	begin			a	novel.	
d.	*she	will				to	begin			a	novel.	

Each of (93a-d) is disallowed because the elided material does not correspond to a chain in the antecedent clause. The only difference to the gapping example (78) in the previous section is the finite auxiliary, which must be present to license pseudogapping.

The following examples illustrate further the behavior of pseudogapping with respect to chains:
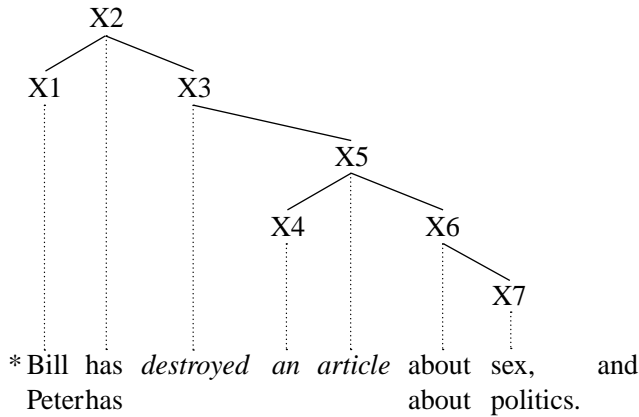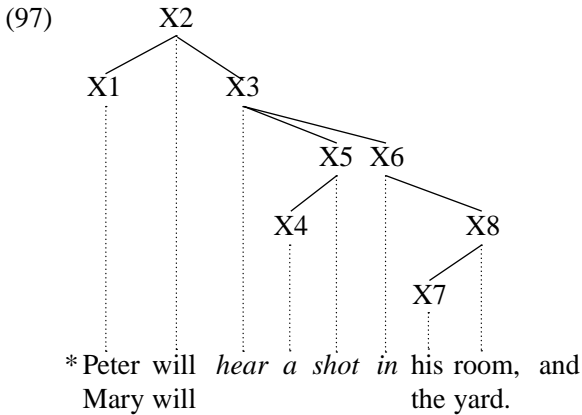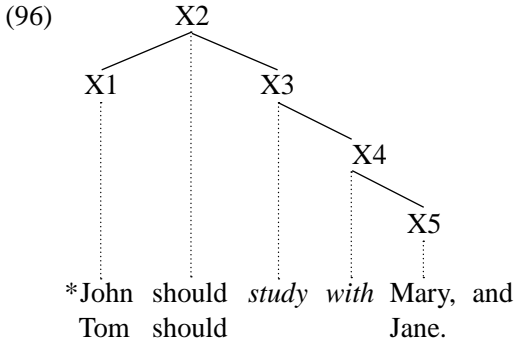
(94)

```
                        X2
          ┌──────────┬──────────────────┐
         X1          X3                  X6
                      └────────┐      ┌───┴──────┐
                              X5                 X7
                           ┌───┘              ┌───┘
                          X4                 X6
```

	He	should	send	fresh	daisies	before	the weekend, and
a.	she	should		fresh	petunias.		
b.	she	should		fresh	petunias	before	Sunday.
c.	she	should				before	Sunday.
d.	* she	should			petunias.		
e.	* she	should				after.	

Unlike in (94a-c), the ellipses in (94d-e) do not correspond to chains. Example (94d) is disallowed on the intended reading where the petunias too are fresh.

Like with gapping, the chain requirement is a necessary, but not a sufficient criterion for pseudogapping. The following sentences are disallowed even though the elided material does correspond to a chain:

(95)

```
            X2
       ┌────┴────┐
      X1         X3
                  └──────┐
                        X5
                     ┌───┴───┐
                    X4      X6
                             └───┐
                                X7
```

	* Bill	has	*destroyed*	*an article*	about	sex,	and
	Peter	has			about	politics.	

(96)

```
              X2
         ┌────┼──────┐
        X1          X3
                     └────┐
                         X4
                          └───┐
                             X5

      *John  should  study  with  Mary,  and
       Tom   should               Jane.
```

(97)

```
              X2
         ┌────┼──────┐
        X1          X3
                 ┌───┼────┐
                X5  X6
               ┌┘    └───┐
              X4        X8
                         └┐
                         X7

      *Peter  will  hear  a  shot  in  his  room,  and
       Mary   will                     the  yard.
```

Sentence (95) demonstrates that pseudogapping may not cut into an NP, and sentences (96) - (97), that it may not cut into a PP. While this paper shall not attempt to identify the constraints limiting the chains that pseudogapping can elide, it does seem likely that they are essentially the same ones (ignoring the auxiliary) that can take part in gapping.

7.3 Stripping

Hankamer & Sag (1976:409) define stripping as "a rule that deletes everything in a clause under identity with corresponding parts of a preceding clause except one constituent and sometimes a clause-initial adverb or negative". Examples follow:

(98) *Alan* likes to play volleyball, but not Sandy. (Hankamer & Sag 1976:409)
(99) Jane gave presents *to John*, but not to Geoff. (Lobeck 1995:27)

The string in the full clause corresponding to the remnant of stripping is in italics.

Note that Hankamer & Sag's definition requires that the remnant string cor-

respond to a constituent. In this regard, McCawley (1997:62) utilizes stripping as a test for constituent structure. As shown in section 3, if a stripped string is disallowed, then the preceding string to which it corresponds does not qualify as a constituent.

(100)

```
                    X2
             X1          X3
                            X5
                        X4

        Sue   will  feed  her  bear.
```

a.		Súe	will	feed	her	bear,	not	Tóm.
b.	*	Sue	wíll	feed	her	bear,	not	wón't.
c.	*	Sue	will	féed	her	bear,	not	stárve.
d.	*	Sue	wíll	feed	her	bear,	not	wón't feed him.
e.		Sue	will	féed	her	bear,	not	stárve him.
f.	*	Sue	will	feed	her	béar,	not	dóg.
g.		Sue	will	feed	her	béar,	not	her dóg.

Sentences (100a,e,g) have the remnant string corresponding to a constituent, whereas in each of (100b,c,d,f), the remnant string does not correspond to a constituent.

These data support the chain concept. If the remnant string does not qualify as a constituent, then the stripped material does not correspond to a chain. Consider the ungrammatical (100b,c,f) in this regard. In each of these sentences, the stripped material does not qualify as a chain: *Sue...feed her bear* is not a chain in (100b), *Sue will...her bear* is not a chain in (100c), and *Sue will feed her* is not a chain in (100f). The grammatical (100a,e,g) in contrast do have the stripped material qualifying as a chain: *will feed her bear* is a chain in (100a), *Sue will* is a chain in (100e), and *Sue will feed* is a chain in (100g).

Like with gapping and pseudogapping, the chain requirement is a necessary but not a sufficient criterion for stripping. Sentence (100d) illustrates this fact: *Sue* is a chain, yet the sentence is ungrammatical. This ungrammaticality results because the remnant does not qualify as a constituent. As stated above, finite VPs – in this case *will feed her bear* – do not qualify as constituents in dependency syntax.

7.4   *Answer fragments*

Answer fragments behave like the remnants of stripping, i.e. they must qualify

as constituents in the corresponding non-elliptical sentence. The following data is similar to the answer fragment example in section 3:

(101)

```
              X2
            /    \
         X1       X3
                 /
               X4
                 \
                  X5
```
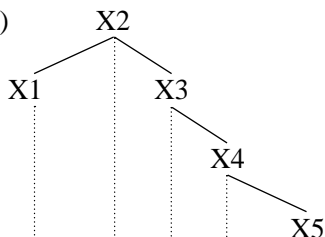
Fred wants to order pizza.

a.	Who wants to order pizza?	- Fred.
b.	? What does Fred intend with pizza?	- * Wants.
c.	* What does Fred order pizza?	- * To.
d.	? What does Fred want with pizza?	- * Order.
e.	What does Fred want to order?	- Pizza.
f.	What does Fred want to do?	- * Wants to order pizza.
g.	What does Fred want to do?	- ? To order pizza.
h.	What does Fred want to do?	- Order pizza.

In each of (101b,c,d,f), the answer fragment is disallowed because it does not correspond to a constituent. The answer fragments in (101a,e,g,h) in contrast do have the fragments corresponding to constituents.

   As with stripping, the fact that the answer fragments must correspond to constituents entails that the elided material must correspond to a chain. Therefore (101b,c,d) are ungrammatical because the elided material in each does not correspond to a chain: *Fred...to order pizza* in (101b) is not a chain, *Fred wants...order pizza* in (101c) is not a chain, and *Fred wants to...pizza* in (101d) is not a chain. The marginal/grammatical (101a,e,g,h) in contrast do have the elided material qualifying as chains: *wants to order pizza* in (101a), *Fred wants to order* in (101e), *Fred wants* in (101g), and *Fred wants to* in (101h) are all chains.

   The question–answer pair in (101f), however, demonstrates that like the other types of ellipsis, the chain requirement is a necessary, but not a sufficient criterion for answer fragments. The elided *Fred* in (101d) is a chain, yet (101d) is unacceptable. This unacceptability is due to the answer fragment *wants to order pizza* not qualifying as a constituent.

8. Morphosyntax

The explication of chains thus far has concentrated on the status of chains in the syntax. The concept of chains is not, however, limited to just syntax. It can eas-

ily be extended to purely morphological units within the word. As Haspelmath (2002:85ff.) shows, syntactic tree structures are applicable to the component elements making up words. This point shall be demonstrated here by briefly comparing analytic predicates with the corresponding synthetic predicates, by distinguishing between syntactic and morphosyntactic dependencies, and by considering the structure of compound nouns.

Consider sentence (1) from the introduction, i.e. *Sue will read the novel*. The analytic predicate *will read* in this example corresponds to the synthetic predicate *lira* in French.

(102) a.   will   b.   -a
              | |
            read   lir-

Both combinations qualify as chains. The difference between the two is that in (102a), the chain consists of two free morphemes, whereas in (102b), it consists of two bound morphemes. Compare next the analytic predicate *will be praised* from English with the corresponding synthetic predicate *laudabor* from Latin:

(103) a.   will   future modal aux   b.   -or   1p passive
              | |
            be   passive aux   -b-   future
              | |
          praised   passive participle   lauda-   'praise'

While the hierarchy of grammatical morphemes is not the same, it should be apparent that both hierarchies form chains. The major difference is again the distinction between free and bound morphemes: the links in the analytic predicate in (103a) are free morphemes, whereas in the synthetic predicate in (103b), they are bound morphemes.

The fact that the elements of analytic and synthetic predicates always form chains is a useful insight. Subject and object can be defined in the syntax by referring to these chains. The noteworthy trait of subjects is that they must always attach to the highest word in the predicate chain. Objects, in contrast, need not attach to the highest word in the predicate, but rather they generally attach to the lowest word in the predicate chain. Observing this structural difference between subjects and objects, a dependency-based approach employing predicate chains can address many subject–object asymmetries.

Haspelmath (1995:53ff.) observes that dependency hierarchies are suited to capture the internal and external syntax of derivational morphology. A present participle such as *singende* 'singing' in German has the status of an adjective with respect to the word it modifies, i.e. it is the daughter of a noun, but it behaves like a verb with respect to its dependents:

(104) a.


```
der im  Wald laut  singende Wanderer
the in  forest loud singing  hiker
'the hiker singing out loud in the forest'
```
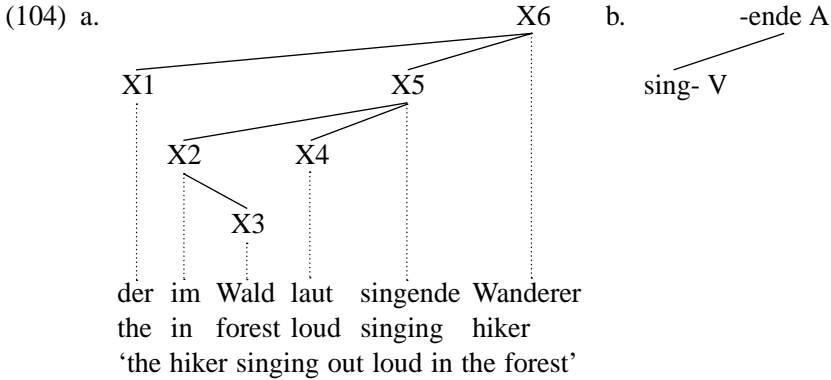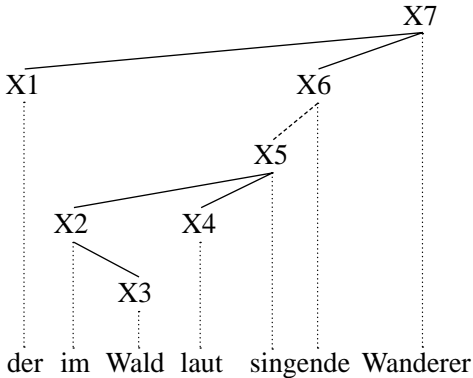
The structure of (104a) shows that *singende* behaves like an attributive adjective with respect to its head *Wanderer*, but like a verb with respect to its dependents *im Wald* and *laut*. (104b) shows the word-internal dependency structure amongst the morphemes of *singende*. The derivational suffix *-ende* has the status of an adjective, whereas the stem *sing-* has the status of a verb.

Haspelmath (1995:56f.) maintains that Tesnière's Transference Theory (*théorie de la translation*) nicely captures the distinction between the internal and external syntax roles of the morphemes. The derivational suffix transfers the verbal stem into an adjective, i.e. *singende* behaves like an adjective with respect to its head *Wanderer*. At the same time, the stem *sing-* maintains its status as a verb with respect to its dependents *im Wald* and *laut*. Following Tesnière (1959), Haspelmath (1995:57) uses a combination of vertical and horizontal lines to express the inner structure of *singende*:

(104) c.
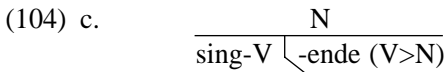
An alternative convention shall be employed here. The component morphemes shall each be granted their own nodes. The relevant distinction is indicated via a special dashed-dotted dependency edge. This dependency edge indicates that the dependency obtains between bound morphemes, rather than between words:

(104) d.

```
                                                X7
         X1                      X6
                           X5
              X2        X4
                   X3
        der  im  Wald  laut  singende  Wanderer
```

The dashed-dotted edge connecting *sing-* to *-ende* indicates that the two nodes together form a single word in the syntax.

The distinction between intra- and inter-word dependencies is further illustrated here by examining compound nouns. Compound nouns in English consist of separate words, whereas German compounds appear as single words.

(105) a. beer bottle   b.   Bierflasche

```
              bottle                              -flasche
         beer                                Bier-
```
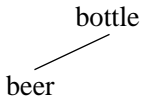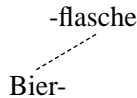
By considering the ambiguity that arises when an adjective appears, we know that the German *Bierflasche* qualifies as a single word, whereas *beer bottle* contains separates words, e.g. *dark beer bottle* vs. *dunkle Bierflasche*. The English *dark beer bottle* is ambiguous, i.e. 'dark bottle of/for beer' vs. 'bottle of dark beer'. The German *dunkle Bierflasche*, in contrast, is not ambiguous, it can only mean 'dark bottle of/for beer'. Regardless of the intended meaning, the components of the compounds form chains. The ambiguity arises in English because the adjective has the option to attach to either word in the compound:

(105) a'.   bottle   a".   bottle

```
         dark beer                              beer
         'dark bottle of beer'          dark     'bottle of dark beer'
```
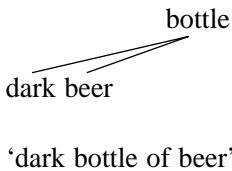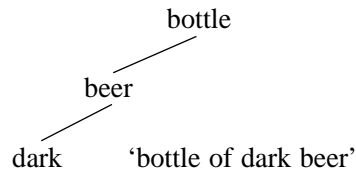
Stress placement distinguishes between the two meanings: the meaning of (105a') stresses *beer*, whereas the meaning of (105a") stresses *dark*.

The ambiguity that is present in (106) can also be observed within the word. The ambiguity of the following word is noted by Haspelmath (2002:93f.):

(106) undoable a. -able b. -able

un- -do- -do-

'cannot be done' un- 'can be undone'
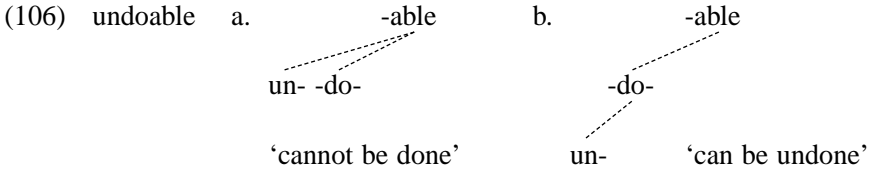
The ambiguity that arises between the parts of the words is straightforwardly expressed in the hierarchy of bound morphemes. The difference in meaning is again determined by stress placement: (106a) has stress on *-do-* and (106b) on *un-*. Note that both analyses have the component elements forming chains.

The fact the chain concept is easily applicable to morphological units as well as to syntactic units is beneficial. The changeover from syntactic chains to morphological chains, and vice versa, occurs smoothly. The potential of this approach should be obvious; one achieves the necessary tool for establishing the means by which semantic units are manifested at various levels of the grammar, i.e. at the morphological as well as at the syntactic level.

9. Chains in constituency grammar

The presentation and discussion of the chain concept thus far is couched in a dependency-based framework. The question arises as to whether a constituency-based grammar can also utilize the chain concept. When O'Grady (1998: 283 fn. 2) formulated his understanding of chains via dependency structures, he intended the concept to be theory-neutral. Indeed, the definition presented above can be re-formulated so that it is applicable to constituency-structures.
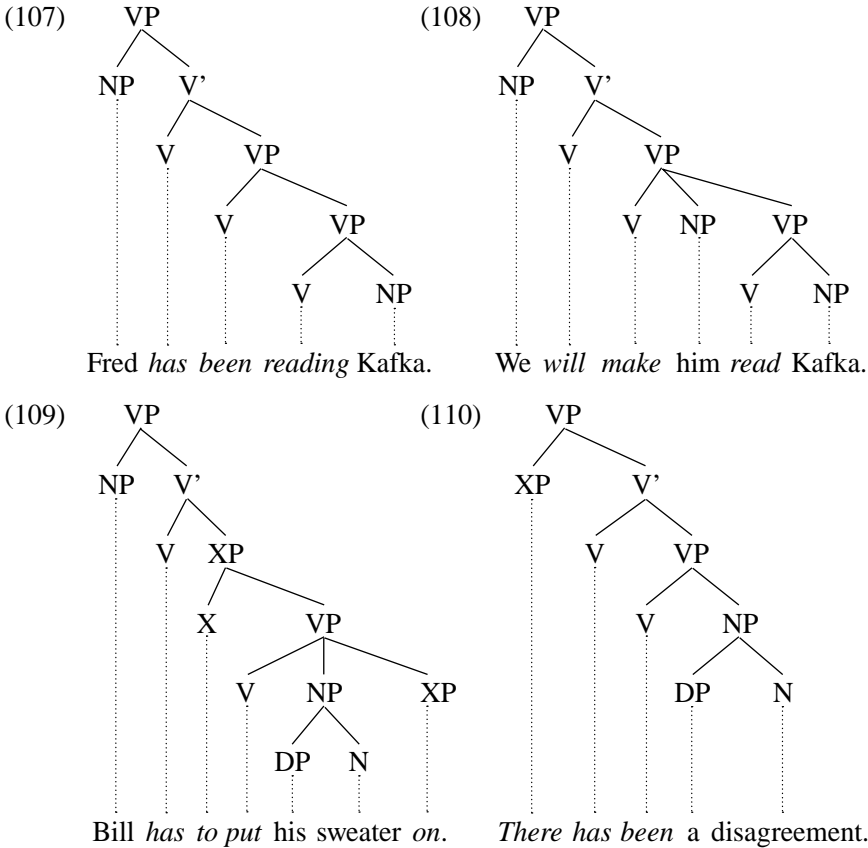
> **Chain (in constituency grammar):** The words A ... B ... C ... (order irrelevant) form a chain iff the maximal projections of B and C are immediately dominated by a projection of A, or if the maximal projection of B is immediately dominated by a projection of A and the maximal projection of C is immediately dominated by a projection of B.

While this constituency-based definition in terms of projection levels is more cumbersome than the dependency-based definition, it can identify the same lexical items as forming chains. In order for it to do so though, some controversial assumptions about constituency structure are necessary.

These controversial assumptions are in a sense a result of the surface syntax orientation of the analysis. Since the dependency-based analysis above references only the structures that are ostensibly present in surface syntax, the constituency-based analysis must do the same in order to be fair. Therefore no references to the entities of derivational theories – e.g. movement procedures, traces, VP-shells, functional categories, etc. – are allowed. We shall see that this limitation forces the constituency-based analysis to adopt the traditional NP analysis of noun phrases over the now widespread DP analysis. In addition,

left-branching or flat VPs are necessary instead of the strictly right-branching VPs that one often encounters nowadays.
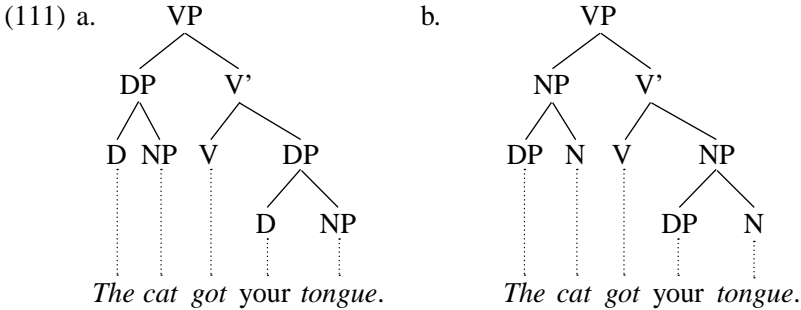
First though, consider the following cases in which the constituency version of the chain definition identifies the correct lexical items as part of the predicate. The following convention is used in the trees: XP marks the maximal (=highest) projection of a given lexical item regardless of whether or not it is the only projection thereof, X' marks intermediate projections, and X marks non-intermediate and non-maximal projections.

(107)

```
        VP
       /  \
     NP    V'
      |   /  \
      |  V    VP
      |  |   /  \
      |  |  V    VP
      |  |  |   /  \
      |  |  |  V    NP
      |  |  |  |    |
     Fred has been reading Kafka.
```

(108)

```
        VP
       /  \
     NP    V'
      |   /  \
      |  V    VP
      |  |  / | \
      |  | V  NP  VP
      |  | |  |  /  \
      |  | |  | V    NP
      |  | |  | |    |
      We will make him read Kafka.
```

(109)

```
         VP
        /  \
      NP    V'
       |   /  \
       |  V    XP
       |  |   /  \
       |  |  X    VP
       |  |  |  / | \
       |  |  | V  NP   XP
       |  |  | |  / \   |
       |  |  | | DP  N  |
       |  |  | |  |  |  |
      Bill has to put his sweater on.
```

(110)

```
         VP
        /  \
      XP    V'
       |   /  \
       |  V    VP
       |  |   /  \
       |  |  V    NP
       |  |  |   /  \
       |  |  | DP    N
       |  |  |  |    |
      There has been a disagreement.
```

The predicate *has been reading* in (107) qualifies as a chain: the maximal projection of *reading* is immediately dominated by a projection of *been*, and the maximal projection of *been* is immediately dominated by a projection of *has*. The same reasoning is successful at identifying the predicates in (108) - (110) as chains too. Note the ternary branching VPs in (108) - (109). Strictly right-branching VPs with binary branching would fail to identify the relevant lexical items as part of the predicate.
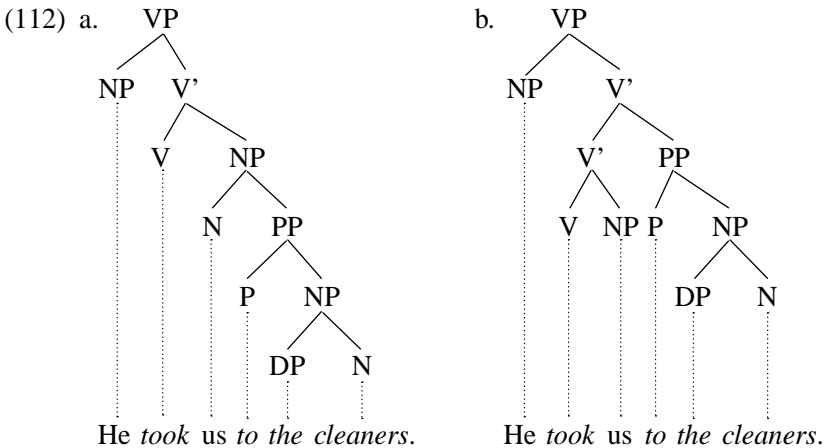
Now consider the chain concept with respect to the DP vs. NP debate.

(111) a.

```
            VP
          /    \
        DP      V'
       /  \    /  \
      D  NP  V    DP
      :   :  :   /  \
      :   :  :  D    NP
      :   :  :  :     :
```
The cat got your *tongue.*

b.

```
            VP
          /    \
        NP      V'
       /  \    /  \
     DP   N  V    NP
      :   :  :   /  \
      :   :  :  DP   N
      :   :  :  :    :
```
The cat got your *tongue.*

Tree (111a) shows a DP analysis of the noun phrases, whereas tree (111b) has the more traditional NP analysis. The lexical item *your* is not part of the idiom since it is variable, e.g. *The cat got his/her/my/nobody's tongue*. In this respect, the NP analysis correctly allows *tongue* to appear within the predicate and *your* to appear outside of it. In contrast, the DP analysis requires that *your* appear inside the predicate in order for *tongue* to appear inside the predicate. The problem with the DP analysis occurs because the maximal projection of *tongue* in (111a) is immediately dominated by the projection of a lexical item that is not part of the predicate, namely that of *your*, hence *tongue* cannot form part of the predicate chain unless *your* does.

The following example illustrates the need for left-branching (or flat) VPs:

(112) a.

```
          VP
        /    \
      NP      V'
      :      /  \
      :     V    NP
      :     :   /  \
      :     :  N    PP
      :     :  :   /  \
      :     :  :  P    NP
      :     :  :  :   /  \
      :     :  :  :  DP   N
      :     :  :  :  :    :
```
He took *us* to the cleaners.

b.

```
          VP
        /    \
      NP      V'
      :      /  \
      :     V'   PP
      :    /  \  / \
      :   V  NP P   NP
      :   :  :  :  /  \
      :   :  :  : DP   N
      :   :  :  : :    :
```
He took *us* to the cleaners.

The lexical items of the predicate in the strictly right-branching VP shown in (112a) do not form a chain. The difficulty occurs because the NP of *us* interrupts the relevant chain. The left-branching VP in (112b), in contrast, does have the words of the predicate forming a chain since the first projection that immediately dominates the PP of *to the cleaners* is the VP of *took*, which is part of the predicate. The point, then, is that the strictly right-branching VPs currently

widespread in some constituency grammars cannot be maintained if the chain concept is to be valid.

This section has demonstrated that a constituency-based grammar referencing surface syntax only can identify the same lexical items as forming chains as the dependency-based version. This situation speaks for the chain concept. Despite this success though, the dependency-based analysis should be preferred. This preference is due to the simplicity of dependency structures. Dependency hierarchies generally contain half the number of nodes and edges as constituency structures. According to Occam's Razor, whenever two theories equally succeed at modeling the behavior of an area of inquiry, then the one of the two that accomplishes the task with less machinery is the better theory. In this regard, dependency structures are truly minimal in comparison with constituency structures. Dependency cannot acknowledge, and has no need for, the various projection types that enable constituency to distinguish between heads and their dependents.

10. Conclusion

This paper has adopted from O'Grady (1998), and developed further, a novel syntactic unit called the *chain*. The chain can be viewed as picking up where the constituent leaves off insofar as certain mechanisms of syntax are sensitive to chains, not necessarily to constituents. The presentation above has considered the extent to which the chain is the essential unit of syntax behind predicate formation, including the predicates of idioms. In this regard, the chain can be viewed as the tool necessary for capturing the manner in which semantic units are realized in the syntax. Furthermore it has been demonstrated that the elided material of many ellipsis mechanisms – i.e. gapping, pseudogapping, stripping, and answer fragments – must correspond to chains.

A dependency-based grammar has been used for the presentation. The dependency-based definition of the chain is as follows (repeated from section 4):

> **Chain (in dependency grammar):** The words A ... B ... C ... (order irrelevant) form a chain iff A immediately dominates B and C, or if A immediately dominates B and B immediately dominates C.

Section 9 has shown that the chain concept can be defined in such a manner that the same combinations of lexical items qualify as chains in a constituency-based grammar as well. The constituency-based definition is as follows (repeated from section 8):

> **Chain (in constituency grammar):** The words A ... B ... C ... (order irrelevant) form a chain iff the maximal projections of B and C are immediately dominated by a projection of A, or if the maximal projection of B is immediately dominated by a projection of A and the maximal projection of C is immediately dominated by a projection of B.

The strength of dependency is its economy, dependency structures lacking the projections of constituency structures and hence containing generally half the number of nodes and edges. In this regard, compare the two formulations. The constituency-based definition must reference the projections of constituency structures in order to accomplish the same thing as the dependency-based definition, which has no need for such projections. The result is that the constituency-based definition is more cumbersome than the dependency-based version. This situation speaks for the dependency grammar approach.

Notes

1. The qualification "in constituency grammar" is necessary since *lira* does not qualify as a constituent in dependency grammar – more on this distinction in section 3.
2. O'Grady utilizes chains to analyze the syntax of idioms – more on this below.
3. Excepting the metaphor, O'Grady's chains have nothing in common with the movement chains in derivational grammars.
4. It is sometimes argued that the LFG and CG frameworks effectively utilize aspects of both dependency and constituency and hence cannot be clearly placed in the one camp or the other. According to the graph-theoretic distinction drawn in this section however, i.e. one-to-one vs. one-to-more-than-one, LFG and CG are entirely constituency-based.
5. The term *finite VP* denotes a VP headed by a finite verb. In contrast, an infinitival VP is headed by an infinitive verb. Dependency structures always have the latter qualifying as a constituent, but not so the former.
6. The term *predicate* here denotes everything in a simple declarative clause except for the subject – see section 5.
7. Adverb insertion is often taken as support for the existence of finite VP; it hence supports the constituency view of constituent structure. An adverb inserted between the verb and its object can result in dubious acceptability, e.g. *?Mary bought yesterday the book*. This argument in favor of finite VP is weak. Adverbs can very well appear between the verb and its object if the object is 'heavy' enough:
    (i)   Mary bought yesterday a very expensive but very small book.
    (ii)   a. * Mary said that she will call soon yesterday.
           b.   Mary said yesterday that she will call soon.
    Data such as these suggest that it is the relative 'weight' of the adverb and object that determines the order in which they appear. The flatness of structure in dependency grammar can address such aspects of weight in a straightforward manner. The assumption is that the heavier sister constituent must appear to the right of the lighter sister constituent.
8. Another widely used constituency test is coordination (Borsley 1991:25ff, Napoli 1993: 165, J. Ouhalla 1994:20ff, Dinneen 1995:456ff, Jacobson 1996:60f, McCawley 1997:58ff, Radford 1997:104ff, Lasnik 2000:11, Meibauer et al. 2002:127, Poole 2002:31f, Radford 2004:70). As Dalrymple (2001:48) points out though, the problem with coordination is that it identifies significantly more structure than even constituency predicts.
    (i)   Larry is studying dependency syntax.
          a.   [Larry] and [Bill] are studying dependency syntax.
          b.   Larry [is] and [isn't] studying dependency syntax.
          c.   Larry is [studying] and [contemplating] dependency syntax.
          d.   Larry is studying [dependency] and [constituency] syntax.
          e.   Larry is studying dependency [syntax] and [phonology].

> f.   [Larry is], but [Fred isn't] studying dependency syntax.
> g.   [Larry is studying], but [Fred is ignoring] dependency syntax.
> h. ? [Larry is studying dependency], but [Fred is studying constituency] syn tax.
> i.   Larry [is studying], but [isn't enjoying] dependency syntax.
> j. ? Larry [is studying dependency], but [is ignoring constituency] syntax.
> k.   Larry [is studying dependency syntax] but [is ignoring constituency syn tax].
> l. ? Larry is [studying dependency] but [ignoring constituency] syntax.
> m.   Larry is [studying dependency syntax] but [ignoring constituency syntax].
> n.   Larry is studying [dependency syntax] and [constituency syntax].

Coordination identifies at least 11 constituents and as many as 14. And if gapping cases are included, the number would climb beyond 14, e.g. [Larry is studying dependency syntax], and [Fred, dependency phonology]. Notice that many of the coordinated strings do not qualify as constituents under standard assumptions, i.e. (i)f,j,l. Since 14 is significantly more than even the 8 that constituency predicts, it is debatable whether coordination is a valid diagnostic for constituent structure.

9.   The definition has been altered slightly. O'Grady's version reads:

> **Chain**: The string x ... y ... z ... (order irrelevant) forms a chain iff x licenses y and z, or if x licenses y and y licenses z.

The term "licenses" has been replaced with the graph-theoretic term "immediately dominates". The change in word choice reduces the potential for confusion, the original term being vague.

10.   See section 8 for a constituency-based definition of the chain.

11.   Note that the current paper uses the term *(dependency) constituent* to denote 'a node plus all the nodes that that node dominates, as defined in section 3. Pickering & Barry use the term *subtree* to denote this unit.

12.   Trask (1997:174), for instance, provides only this definition of "predicate" in his dictionary of linguistics terminology. Even Quirk, Greenbaum, Leech, & Svartvik's (1985:79, 1118, 1398) and Huddleston & Pullum's (2002:25, 44, 50) comprehensive grammars of the English language prefer this understanding of the predicate.

13.   Since it does not in any way behave as an autonomous word, the particle *zu* is viewed as forming a single word with the infinitive.

14.   A constituent the root node of which is part of the predicate may not be extraposed over its governor:

(i)   Er   ist   mein   Freund   gewesen.
       he   is   my   friend   been
       'He was my friend.'

a   *Er ist gewesen mein Freund.

Its governor may not be fronted alone:

b.   *Gewesen ist er mein Freund.

It may not pied-pipe its governor:

c.   *der Freund, der gewesen er ist
       'the friend that he was'

It may not be scrambled in the Mittelfeld 'middle field':

d.   *dass er mein Freund damals gewesen ist

It may not be separated off by an intonation break:

e.   *Er scheint, mein Freund zu sein.
       'He appears to be my friend.'

15.   There is actually a distinction to be drawn in this area. Nunberg et al. (1994) – see also Fellbaum (1993) and Pulman (1993) – discern *idiomatic phrases* (e.g. *kick the bucket, shoot the breeze*) from *idiomatic combining expressions* (e.g. *spill the beans, pull strings*). The

former have the meaning spread evenly across all the components of the idiom, whereas the latter allow the meaning to be partitioned compositionally to the parts. The distinction is supported by various operations:

(i) Bill kicked the bucket.
    a. *The bucket was kicked by Bill.   - Idiomatic meaning absent
    b. *The bucket, Bill certainly did kick.   - Idiomatic meaning absent

(ii) Bill spilled the beans.
    a. The beans were spilled by Bill.   - Idiomatic meaning present
    b. The beans, Bill certainly did spill.   - Idiomatic meaning present

Idiomatic phrases are static; they cannot be altered and combined flexibly in the syntax. Idiomatic combining expressions, in contrast, are dynamic; they can be altered and combined flexibly in the syntax. While this distinction is well founded, it does not alter the analysis in terms of chains, both predicate types always qualifying as chains.

16. The following examples appear to contradict the chain requirement:
    (i) The strings that Pat pulled got Chris the job.
        (McCawley 1997, Nunberg et al. 1994:510, O'Grady 1998:288)
    (ii) What a scene she made when she heard the news.
        (Fellbaum 1993:284)

The idioms spread from the main clause in each case into the subordinate relative clause. On an analysis that has the finite verb heading the relative clause, and not the relative pronoun, (Kunze 1975:129f), the component words of the idiom do indeed form a chain.

17. Manfred Kienpointner points out a problem with examples similar to (85):
    (i) Kurt mag das Foto von uns, und
       Susi   das Porträt.
       'Kurt likes the photo of us, and Susi the portrait.'

The reading where 'das Porträt' is 'von uns' is possible, contrary to what the chain requirement predicts. The solution to this problem may lie with the status of adjuncts as scope bearing items. Consider the following example in this regard:

    (ii) Kurt likes the cars from Japan, and Susi likes the beer.

This example does not involve gapping at all, yet the reading where the beer too is from Japan is quite possible. Such cases suggest that NP adjuncts such as *von uns* and *from Japan* have the ability to scope over NPs in parallel structures that follow.

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