Title	A Mismatch between Grammatical and Phonological Structure in English : With Special Reference to Prepositional Phrases
Author(s)	Iwasaki, Shin-ya
Citation	待兼山論叢. 文学篇. 2003, 37, p. 31-47
Version Type	VoR
URL	https://hdl.handle.net/11094/47927
rights	
Note	

A Mismatch between Grammatical
and Phonological Structure in English:
With Special Reference
to Prepositional Phrases*

Shin-ya IWASAKI

1. Introduction

This paper deals with a mismatch between phonological (pro-sodic) and grammatical (syntactic) structure in English, which has been a major field of research in prosody (Selkirk (1984), Nespor and Vogel (1986), Steedman (1991, 2000) and Croft (1995)). We shall argue that intonation groups in clause-final prepositional phrases in English are captured in terms of a degree of entrenchment within the framework of Cognitive Grammar (Langacker (1987, 1991, 1999))[1].

Although attempts have been made to explain the mismatch phe-nomena between grammatical and phonological structure by afore-mentioned and other researchers, there are problems with their anal-yses. Among them, Chomsky and Halle (1968: 372) discuss a mismatch between them and provide the following examples:

(1) a. [This is [the cat that caught [the rat that stole [the cheese]]]].

b. ‖ This is the cat ‖ that caught the rat ‖ that stole the cheese ‖

The divisions by brackets in (1a) show the syntactic structures, which in principle consist of right branchings, in the terminology of the syn-tactic tree structure. The phonological structures that are indicated by verses by each double vertical bar in (1b), however, do not correspond to the syntactic structures in (1a). We will look at how Cognitive

Grammar deals with this phenomenon.

This paper is organized as follows. Section 2 offers an overview of some earlier analyses of the relation between phonological and grammatical structures. Section 3 presents the theoretical framework of this paper. Section 4 is devoted to introducing conceptual structures provided by Langacker (2001). Section 5 analyzes a mismatch between grammatical and phonological structure in English, focusing on clause-final prepositional phrases. Finally, section 6 presents concluding remarks.

2. Previous Analyses

In this section, we offer an overview of some major previous analyses of the relation between phonological and grammatical structures and look at some of their problems.

2.1. Syntax-Based Approaches

Although Chomsky and Halle (1968: 372) consider a mismatch between grammatical and phonological structure as a part of performance, it has been claimed that it should be treated as a competence phenomenon by some linguists, for example, Selkirk (1984) and Nespor and Vogel (1986) in the generative tradition. Selkirk (1984) tries to formulate a well-formedness condition on intonation phrasing and proposes 'the Sense Unit Condition,' which is based on semantic constraints. As Selkirk (1995: 567) herself points out, however, it is difficult to implement the idea that the elements within an intonational phrase must constitute a sense unit.

Nespor and Vogel (1986) adopt syntactic restructuring rules for phonological structure and assume that a list-restructuring rule predicts the existence of intonational phrases between identical constituents. As Croft (1995: 854) points out, however, their data do not show that nested structures can be broken in the same way as parallel syntactic structures, contrary to their claim[2].

Ladd (1996) proposes that Selkirk's (1984) 'Strict Layer Hypothesis (SLH)' can be modified to accommodate various differences of

boundary strength, and claims that while the prosodic structure is somehow flatter than the syntactic structure which it corresponds to, there are phonetic cues to indeterminate depth of structure. He argues that the SLH should be weakened and a Compound Prosodic Domain (CPD) is needed. A CPD is described as follows: it is 'a prosodic domain of a given type X whose immediate constituents *are themselves of type X*' (Ladd (1996: 244)):

$$
\begin{array}{c}
X \\
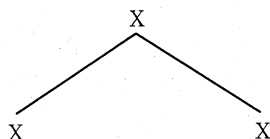\diagup \diagdown \\
X \qquad X
\end{array}
$$

Figure 1

Although a compound noun *telephone call*, for example, is made up of two independent nouns *telephone* and *call* syntactically, it functions like a single noun. Let us consider a conjunction in the same manner. Even though [A and B], for example, is composed of the two intonational phrases, it can be treated like a single one. The definitions of boundaries or edges in compound domains are the same as those of simple ones. Ladd claims that since the categories of the prosodic hierarchy are strictly ranked, the 'flatness' of prosodic structure relative to syntax can be expressed without losing the important advantage of the SLH. As he mentions, however, it is necessary to constrain the range of circumstances in which compound intermediate phrases are posited[3].

2.2. Combinatory Categorial Grammar

Steedman (1991, 2000) proposes a theory that directly generates a phonological form within a Combinatory Categorial Grammar (CCG). CCG pairs phonological forms with logical forms without intermediate representational levels. Since the former is closely related to the representation of information structure, it is possible to generate the following two surface structures:[4]

(2)　Q : I know who proved soundness. But who proved completeness?

A : ‖ Marcel ‖ proved completeness ‖.

(3) Q : I know which result Marcel predicted. But which result did Marcel prove?

A : ‖ Marcel proved ‖ completeness ‖.

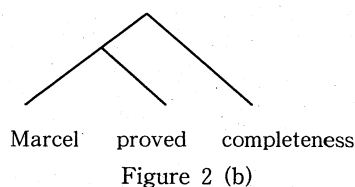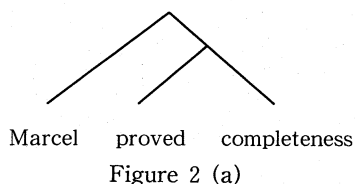| Marcel | proved | completeness | Marcel | proved | completeness |

Figure 2 (a)   Figure 2 (b)

Figure 2 (a) and 2 (b) correspond to the answers in the sentences (2) and (3), respectively. The subject *Marcel* and the object *completeness* in (2) and the verb *proved* and the object *completeness* in (3) bear nuclear pitch accents. On the other hand, in the answer A in (3), the order of the two tunes is reversed. CCG accounts for these phonological groupings and links each tune with them, which cannot be implemented by the traditional syntactic analysis.

As Croft (1995: 855) points out, however, Steedman's (1991) analysis does not completely predict prosodic structures. CCG has a possibility that it cannot predict the possible intonation groups in contexts other than right node raising, for example[5]. On the other side, it can predict wrong intonation groups; it predicts that an intonation group boundary can appear between any two words because any sequence of syntactic elements may form a constituent by using forward/backward composition and type-raising (for technical detail, see Steedman (1991))[6]. However, as also mentioned by Croft, not every syntactic unit forms an intonation group, and not every word boundary is a possible intonation boundary.

Moreover, Jun (1998: 220) points out that Steedman's (1991) model cannot account for variability across speakers and across repetitions within a speaker. It also cannot predict divergence in phrasing through speech rate or the number of syllables in a phrase, or through the semantic weight or frequency of words or phrases.

2.3. A Cognitive Perspective

Chafe (1994) investigates how the flow of consciousness affects the shape of language in oral speech and proposes the constraint that an intonation unit, which is our 'intonation group,' tends to include one new concept at a time. He classifies intonation units into three groups, that is, substantive, regulatory, and fragmentary. Substantive units convey actual ideas of events, states, and referents. Regulatory units regulate interaction or information flow and fragmentary units are ones that are truncated or not completed. Substantive units are referred to as windows of attention in Langacker's (2001) terminology, which will be discussed below.

Taking another cognitive perspective, Croft (1995) examines actual oral utterances in detail and finds that a lot of intonation units are full grammatical ones (referring to full noun phrases, prepositional phrases and various clauses). He finds, however, that not all grammatical units are a single intonation unit, although most grammatical units are. He proposes that three major cognitive constraints determine the assignment of two grammatical units to a single intonation unit; that is, parallelism, syntactic complexity, and distance. 'Parallelism' is seen in the coordinate structure, for example. 'Syntactically complex' expressions, which refer to complex subject NPs, VPs, or object NPs, tend to be divided into intonation units. 'Distance' is related to the multiple syntactic distance between two constituents. Moreover, he examines consequences for grammaticalization, Construction Grammar (Fillmore et al. (1988)), and the token frequency by using the spoken language (p. 839). The main type of grammaticalizable event sequence attested in the corpus, for example, is the motion-action sequence. According to Croft, the following example includes grammaticalized elements:

(4) ... and *he goes and takes the hat to the kid,* (Croft (1995: 869))

In (4), an intonation group is a whole sentence and does not have a boundary before the conjunct *and*, in spite of the coordinate structure. We find a mismatch between phonological and grammatical groups

there. Croft points out that grammaticalization is a factor of a mismatch between grammatical and phonological structure, and the latter is not just captured by the syntactic rule.

2.4. Summary

In this section, we looked at three perspectives for phonological structure. Although syntactic approaches pay attention to the meaning of grammatical structure, they cannot always explain various phonological structures. Selkirk's Sense Unit Condition is inadequate in composing a sense unit. Nespor and Vogel (1986) also have problems with respect to handling nested structures and parallel syntactic structures, as pointed out by Croft (1995). Ladd (1996) needs constraints on the range of compound intermediate phrases. While they all assume that phonological structure is autonomous, Steedman assumes that it is dependent on information structure. Although he usefully shows the relation between phonological and syntactic structure in a compositional way, his analysis has problems that are pointed out by Croft (1995) and Jun (1998). Although Chafe's (1994) and Croft's (1995) cognitive constraints for phonological structure and their fine observations seem to be persuasive, we still require a theoretical analysis to capture how phonological structure is motivated.

3. Theoretical Framework

Our discussion is based on the tenets of Cognitive Grammar (Langacker (1987, 1991, 1999)). Cognitive Grammar (henceforth CG) assumes that language forms a symbolic unit, which consists of a semantic pole and a phonological pole. According to Langacker (2001), CG can handle discourse in the same manner as lexical items or grammatical constructions. In CG the conceptualization includes the apprehension of the speaker and hearer of the ground (G) and the current discourse space (CDS). The ground means "the speech event, the speaker (S) and hearer (H), their interaction, and the immediate circumstances" (Langacker (2001: 144)). The CDS indicates "the mental space comprising those elements and relations construed as being shared by the

speaker and hearer as a basis for communication at a given moment in the flow of discourse" (ibid.).

Langacker (2001) assumes that the intonation group is also integrated into a symbolic structure. In the semantic pole, it pairs with the 'window of attention,' which belongs to the channel of the information structure and indicates the frame of attention in the flow of discourse at a consciously accessible level.

4. Conceptual Structures

Langacker (2001) briefly discusses how CG approaches discourse and intonation groupings. He argues that they can be treated in the same manner as linguistic structures and CG tenets can explain them without any modification. That is to say, a sequence of a usage event in discourse can be abstracted as a conventional linguistic unit and the focusing of attention within a viewing frame, in other words, the CDS, is updated. Likewise, intonation groups are considered as progressive assemblies. Notice that they constitute conceptual structures, not syntactic structures as indicated by the following example:

(5) Alice hopes Bill believes Cindy left. (Langacker (2001: 181))

In (5), each syntactic constituent consists of *believes Cindy left* and *hopes Bill believes Cindy left*, for example, while intonation groups form *Alice hopes, Bill believes*, and *Cindy left*, which are identified as conceptual structures. (5) is sketched in Figure 3.

In Figure 3, the abbreviations *tr* and *lm* stand for trajector and landmark, respectively. The former means the primary focal participant and the latter a secondary focal participant. The bold lines show that they are profiled, in other words, they are elevated to a special level of prominence. Heavy-line boxes, that is, *Alice hopes, Bill believes*, and *Cindy left* represent the attentional framing. They correspond to conceptual structures, not syntactic structures, and each of them is parsed rightward as discourse proceeds successively.

In this paper, we assume that phonological structures are identified with conceptual structures on the basis of Langacker (2001) and
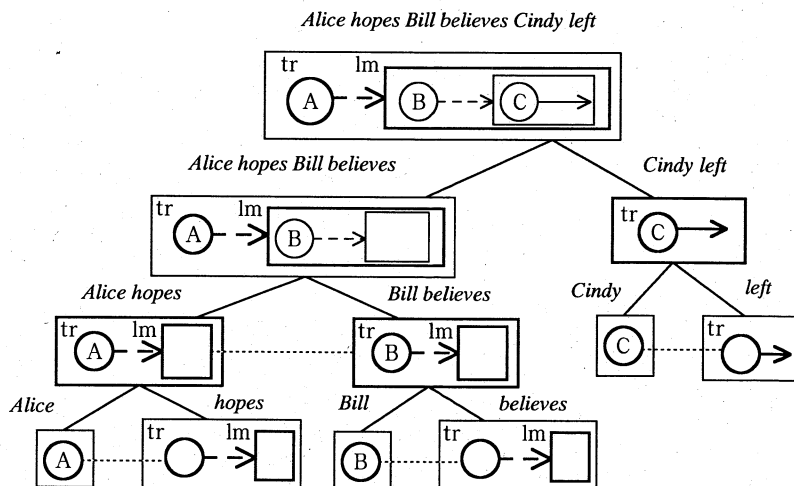
Figure 3

the following discussion does not contradict his analysis.

5. A Mismatch between Grammatical and Phonological Structures in English

As we saw in the previous section, Langacker (2001) argues that intonation groups pair with the window of attention in information structure at the conceptualization pole, and the mismatch phenomenon between grammatical and phonological structures is explained in terms of conceptual structure in CG. This section discusses a mismatch between those in English and look at clause-final prepositional phrases in detail.

5.1. A Cognitive Account of Data from Previous Analyses

First, we will discuss how CG explains phonological phrasings that are provided by the previous analyses. Let us consider examples that are presented by Selkirk (1985: 293):

(6) a. ‖ Jane gave the book to Mary ‖
　　 b. ‖ Jane ‖ gave the book to Mary ‖

    c. ‖ Jane gave the book ‖ to Mary ‖

    d. ‖ Jane gave ‖ the book ‖ to Mary ‖

    e. *‖ Jane ‖ gave ‖ the book to Mary ‖

    f. *‖ Jane gave ‖ the book to Mary ‖

    g. ‖ Jane ‖ gave the book ‖ to Mary ‖

    h. ‖ Jane ‖ gave ‖ the book ‖ to Mary ‖

My explanation is as follows: in (6a), a speaker takes the attentional framing as the whole sentence. Sentence (6b) might be used when a speaker wants to mention what Jane did or who gave the book to Mary. (6c) can be employed when a speaker wants to say to whom Jane gave the book. In (6d) each attentional frame includes a single noun and this conforms to Chafe's (1994) constraint, "one new concept at a time." In (6e) the subject *Jane* and the verb *give* compose their own attentional frame. Since the attentional framing *give* enables the hearer to expect only what the subject provides, it is difficult for a speaker to include two new concepts in one attentional frame. Likewise, in (6f), since the attentional frame *Jane gave* invokes only what the subject provided in the following attentional frame, two new concepts in one attentional frame should be avoided. In (6g), like (6d), each attentional frame includes one new concept. In (6h), the verb is also considered as a new concept.

    Next let us look at the following example:

(7)   *‖ Seymour prefers the nuts ‖ and bolts approach ‖.

                                                    (Steedman (1991: 271))

Since the phrase *nuts and bolts* is idiomatic and entrenched, it cannot have a phonological boundary before the conjunct *and*. CG does not need a special apparatus to stipulate it in the only phonological structure because it is based on a usage-based model of language, and entrenchment is a core notion of CG in linguistic structure.

5.2. Clause-Final Prepositional Phrases

    Second, we shall discuss how intonation groups of clause-final

prepositional phrases (PPs) are explained, making use of the data offered by Fitzpatrick (2001).

Fitzpatrick (2001) examines the prosodic phrasing of PPs in the clause-final position in a professionally read speech-corpus and argues that phrasal length based on accented syllable count contributes to prosodic phrasing. Let us consider the following examples:[7]

(8)   a.   ‖ had been nótorious IN the cóunty ‖
           b. | from óver thére IN the víllage ‖
           c.   ‖ for féar OF the chéetah ‖
           d. | ópen the shútters OF your wíndow ‖
           e.   ‖ at the córner OF the céiling.
(9)   a.   ‖ please be precise ‖ ÁS to détails.
           b. | with his cane ‖ AT the béllpúll.
           c. | the ONE thing ‖ BEFÓRE she díed |
           d.   ‖ through a hole ‖ IN the párk wáll.
           e.   ‖ passed at once ‖ ÍNTO the róom ‖
           f.   ‖ to ask the advice ‖ OF Shérlock Hólmes.
           g.   ‖ so as to make a LOOP ‖ OF the whípcórd.

<div align="right">(Fitzpatrick (2001: 552))</div>

Sentences (8a-e) have only one accented syllable, while sentences (9a-g) have more than one within PPs. Based on her claim, Fitzpatrick argues that prosodic phrasing is accounted for by accented syllable count, rather than by the word length or by the syllable length.

Although Fitzpatrick claims that accented syllable count as the measure of length is more decisive than word count, we find that there is a more important factor that we should consider. As she says, although accented syllable count shows more of a correlation between the length of the PP and phonological phrasing, there is still a distribution that is not decisive. Rather, we shall argue that we should focus on the "semantic connectivity," which we shall define as that, between words before and after the preposition[8]. In other words, we claim that entrenched words or phrases prototypically compose one intonation group; phrases or words before a preposition that are semantically

connected with those after a preposition tend to compose one intonation group with PPs; and in the case in which we cannot find semantic connectivity between phrases or words before and after a preposition, PPs compose an intonation group by themselves. These three categories form a continuum on the scale of a degree of entrenchment. This assumption conforms to that of the length of word or accented syllable count. That is to say, the longer a phrase is or the more an accented syllable is, the more PPs compose an intonation group by themselves. Moreover, the more abstract the word meaning is, the more semantically connected it is, because the abstract word is needed to be specified semantically more than the concrete word. This is, of course, a matter of degree.

Now let us look at Fitzpatrick's data closely. Sentences (8a–e) have short words or one accented syllable after each preposition. In (8a), the predicate *notorious* is adjacent to the PPs. Since a noun tends to form one new concept (Chafe (1994)), the predicate can be associated with the PPs, if the former is adjacent to the latter. Therefore we might say that since a predicate and PPs can form a unit, they tend to compose one intonation group, if nouns in PP are short. In (8b), since the phrase *over there* refers to some location that is pointed out by the speaker and *the village* specifies it, they are closely connected with each other. Therefore (8b) composes one intonation unit. In (8c), since the phrase *for fear of* is idiomatic, they are uttered as one intonation group with *the cheetah*. Since the nouns *shutters* and *corner* in (8d) and (8e) are intrinsic to *window* and *ceiling*, respectively, the former is connected with the latter, respectively. Hence they compose one intonation group. On the other hand, PPs in sentences (9a–g) are less semantically connected with phrases or words before them. In (9a), the adverbial *as to details* adds new concept to the manner of the interlocutor's speech. The noun *bellpull*, the subordinate clause *before she died*, and the noun phrase *park wall* in (9b), (9c), and (9d), respectively, deliver a new concept. In (9e), although the phrase *passed* and the PP *into the room* are semantically connected, the adverbial *at once* is inserted between them. Since the nominal *Sherlock Holmes* in (9f) and *whipcord* in (9g) are not intrin-

sic to *advice* and *loop*, respectively, they are less connected. Therefore, we might say that in all of the examples (9a–g), PPs compose an intonation group by themselves because they are less connected with elements before them.

If we analyze clause-final PPs in terms of the notion of semantic connectivity, we can explain the following data that Fitzpatrick (2001) cannot (p. 553):

(10) a. ‖ and then ran | swíftly ÍNTO the dárkness.
　　 b. | which ‖ WÁNDER frèely ÓVER the estáte |

Fitzpatrick's claim predicts that (10a) should include a pause and (10b) should have a pause in the phrase *wander freely over the estate*, contrary to a fact. In terms of semantic connectivity, the predicates *run* and *wander* are connected with the directional preposition *into* and *over*, respectively. Since they contain a single noun, they conform to the notion that nouns tend to form one new concept by Chafe (1994), though adverbs are inserted between the verbs and PPs.

Moreover, Fitzpatrick offers four exceptions against her claim, that is, syntactic, semantic, discourse, and pragmatic exceptions. First, the syntactic exception is illustrated with the following examples (p. 555):

(11) a. ‖ áfter your retúrn TO Éngland.
　　 b. | for the tíme OF yéar.
　　 c. ‖ IN the sílence of the níght ‖

As we see in (11), there is a prosodic break before the initial preposition when one PP follows after another. She considers that there is pre-planning with their complements. In terms of semantic connectivity, we consider that the noun *return* in (11a) could require directional PPs. Hence they compose one intonation group. Since the phrase *for the time of year* in (11b) is idiomatic and the nouns *silence* and *night* are semantically connected in (11c), each of them compose one intonation group.

Second, the semantic exception is represented by a partitive con-

struction such as *one of men*, for example (p. 556):

(12)   a. | who is the last survivor | of óne of the ÓLDEST fámilies
          IN Éngland ‖
        b. ‖ in óne OF the sítting róoms.

A prosodic break does not occur after the head *one* although a PP has
two accented syllables in (12). We shall argue that since a partitive
construction is entrenched (Langacker (1990), Croft (1995)), it composes
one intonation group.

   Third, the discourse exception is indicated by the distinction be-
tween given and new information (p. 557):

(13)   a. ‖ so that I've had to move | OUT of my own room | into
          the room next door ‖ the róom IN which my síster díed.
        b. We moved | into the bedroom next door ‖ the róom OF
          Dóctor Róylott.

According to Fitzpatrick, in (13a, b), the phrase *the room* in the final
PPs is given information, hence there is no break between *the room*
and the preposition in the final PP. Since given information consists of
elements that are entrenched temporally, it composes one intonation
group.

   Finally, a pragmatic exception is seen in the following example
(p. 557):

(14)   He's a collector OF ‖ STRÁNGE ánimals.

In (14), the word *strange* is uttered with contrastive stress and the pause
has a pragmatic effect. The perspective of semantic connectivity also
accounts for this example. Since the adjective *strange* has contrastive
stress, it is semantically separated from the element before it. Hence
the phrase *strange animals* composes one intonation group.

   Thus, phonological groupings of clause-final PPs are accounted
for in terms of the notion of semantic connectivity. We consider that it
forms a continuum on the scale of entrenchment, although it is a matter
of degree[9].

5.3. Given and New Information

In section 2.2, we saw that although CCG deals with phonological structure, it has problems that are pointed out by Croft (1995) and Jun (1998). This subsection argues that CG can motivate phonological structure with the relation between given and new information. Since CG assumes a bipolar of windows of attention in the channel of information structure at the semantic pole and of intonation group in the channel of intonation at the phonological pole, it can successfully characterize phonological structure dependent on given and new information.

Let us now consider the following example:

(15) Q : I know who proved soundness. But who proved completeness?

A : ‖ Marcel ‖ proved completeness ‖.   (= (2))

(16) Q : I know which result Marcel predicted. But which result did Marcel prove?

A : ‖ Marcel proved ‖ completeness ‖.   (= (3))

In (15), the subject *Marcel* is new and *proved completeness* is given information. Since the former delivers a new concept, it composes one phonological group. On the other hand, *Marcel proved* is given in (16) and *completeness* is new information. Since the former is different from the latter in informational status, they compose different intonation groups. From the perspective of semantic connectivity, we shall suggest that elements in given information are entrenched temporally. That is why given information composes a different intonation group with new information.

Although we do not discuss what tunes are linked to given or new information in this paper, we consider that it is possible to specify it in CG because CG assumes that information structure pairs with intonation.

6. Conclusion

In this paper, we considered a mismatch between phonological

and grammatical structure of clause-final prepositional phrases in English. This paper argued that a mismatch between phonological and grammatical structure of clause-final PPs in English is accounted for by the notion of semantic connectivity, which forms a continuum on the scale of a degree of entrenchment. It was shown that mismatch phenomena between phonological and grammatical structure in English are captured by introducing conceptual structures.

Notes

* I would like to thank Seisaku Kawakami and Yukio Oba for their comments and encouragement. I am also grateful to Paul A. S. Harvey for his stylistic corrections. All remaining errors are, of course, my own.

1) In this paper, we shall follow Langacker's (2001) intonation group, which refers to a unit that is often separated by pauses phonologically, although that is not always the case. They are identified with intonation units in Chafe (1994), intonational phrases in Selkerk (1984) and Nespor and Vogel (1986), the intermediate phrases in Pierrehumbert and Beckman (1988), and tone groups in Halliday (1994²).

2) The parallel syntactic structure is shown by the following example;
   (i) Three boys came out, helped him *pick himself up, pick up his bike, pick up the pears.* (Croft (1995: 851))

3) Aside from syntactic analyses, Halliday (1994²) and Cruttenden (1986), for example, analyze intonation phrasings on the basis of information shared by a speaker and listener.

4) Although Steedman uses small capitals for expressing nuclear pitch accents, we do not employ them here to avoid confusion between Steedman's notations with those used in Fitzpatrick (2001), which is discussed below.

5) An example with right node raising is as follows:
   (i) I think that Mary prefers, and I know that you dislike, corduroy. (Steedman (1991: 267))

6) Steedman (2000) does not answer these questions and rather concentrates on the relation between intonation and information structure.

7) We follow Fitzpatrick's (2001) notations here. They are indicated as

follows; the primary phrase boundaries, which are determined by a perceived pause, and the secondary phrase boundaries, which are determined by a pitch change but no pause, are represented by a double vertical bar (‖) and a single bar (|), respectively. An accent mark stands for accent or prominence on the syllable. Small capitals express contrastive stress.

8) The terminology "semantic connectivity," which I term in this paper, is not related to van Hoek's (1997) "conceptual connectivity."

9) I also check Fitzpatrick's (2001) data that are posted at http://www. chss.montclair.edu/linguistics/pp.htm. Although my claim motivates them appropriately, one may wonder whether the following PPs are semantically connected with the noun before the preposition (her example (31) in Group B);

(i) All at once ‖ I heard another sound ‖ a very gentle ‖ soothing sound ‖ like that of a small ‖ jêt OF stêam ‖ escaping from a kettle.

In (i), the clause final PPs are the phrase *jet of steam*, not *that of a small*. Since the nouns *jet* and *steam* are semantically connected, they compose one intonation group. Although my proposal "semantic connectivity" may not be limited to the clause final PPs, I do not discuss those in the other positions in this paper.

References

Chafe, Wallace (1994) *Discourse, Consciousness, and Time: the Flow and Displacement of Conscious Experience in Speaking and Writing*, University of Chicago Press, Chicago.

Chomsky, Noam and Morris Halle (1968) *The Sound Pattern of English*, MIT Press, Cambridge, MA.

Croft, William (1995) "Intonation Units and Grammatical Structure," *Linguistics* 33, 839-882.

Cruttenden, Alan (1997²) *Intonation*, Cambridge University Press, Cambridge.

Fillmore, Charles J., Paul Kay, and Mary Kay O'Connor (1988) "Regularity and Idiomaticity in Grammatical Constructions: the Case of *Let Alone*," *Language* 64, 501-538.

Fitzpatrick, Eileen (2001) "The Prosodic Phrasing of Clause-Final Prep-

ositional Phrases," *Language* 77, 544-561.

Halliday, M. A. K. (1994²) *An Introduction to Functional Grammar*, Edward Arnold, London.

Iwasaki, Shoichi (1993) "The Structure of the Intonation Unit in Japanese," *Japanese/Korean Linguistics* 3, ed. by Soonja Choi, 39-53, CSLI, Stanford.

Jun, Sun-Ah (1998) "The Accentual Phrase in the Korean Prosodic Hierarchy," *Phonology* 15, 189-226.

Ladd, D. Robert (1996) *Intonational Phonology*, Cambridge University Press, Cambridge.

Langacker, Ronald W. (1987) *Foundations of Cognitive Grammar* Vol. 1; *Theoretical Prerequisites*, Stanford University Press, Stanford.

Langacker, Ronald W. (1990) *Concept, Image, and Symbol: the Cognitive Basis of Grammar*, Mouton de Gruyter, Berlin.

Langacker, Ronald W. (1991) *Foundations of Cognitive Grammar* Vol. 2; *Descriptive Application*, Stanford University Press, Stanford.

Langacker, Ronald W. (1999) *Grammar and Conceptualization*, Mouton de Gruyter, Berlin.

Langacker, Ronald W. (2001) "Discourse in Cognitive Grammar," *Cognitive Linguistics* 12, 143-188.

Nespor, Marina and Irene Vogel (1986) *Prosodic Phonology*, Foris, Dordrecht.

Pierrehumbert, Janet and Mary Beckman (1988) *Japanese Tone Structure*, MIT Press, Cambridge, MA.

Selkirk, Elisabeth O. (1984) *Phonology and Syntax: the Relation between Sound and Structure*, MIT Press, Cambridge, MA.

Selkirk, Elisabeth O. (1995) "Sentence Prosody: Intonation, Stress, and Phrasing," *The Handbook of Phonological Theory*, ed. by John A. Goldsmith, 550-69, Blackwell, Cambridge.

Steedman, Mark (1991) "Structure and Intonation," *Language* 67, 260-296.

Steedman, Mark (2000) "Information Structure and the Syntax-Phonology Interface," *Linguistic Inquiry*, 31, 649-689.

van Hoek, Karen (1997) *Anaphora and Conceptual Structure*, University of Chicago Press, Chicago.

(Graduate Student)