

Topic and Focus

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Introduction

In his Grammar of Spoken Chinese, the linguist Yuen Ren Chao notes a distinction between the grammatical predicate of a sentence and what he calls the logical predicate. Chao points out that the two do not always coincide, illustrating this point with the following exchange between a guide (A) and a tourist (B).

- (1) A: We are now passing the oldest winery in the region.
B: Why?

The source of the joke here is that the English sentence uttered by the guide has two possible interpretations. On one interpretation, the main predicate asserted by the sentence (Chao's logical predicate) coincides with the grammatical predicate *-are now passing the oldest winery in the region*. On the other interpretation, the logical predicate only includes the direct object. The tourist (B) seems to be questioning the first interpretation (why are we passing the oldest winery in the region), but it is the second interpretation that the guide actually intended to convey (what we are now passing is the oldest winery in the region).

Chao notes (1968:78) that the joke would be lost in Chinese because "In general, if in a sentence of the form S-V-O the object O is the logical predicate, it is often recast in the form S-V *de shi* 'what S V's is O', thus putting O in the center of the predicate." In this case, the guide's intended message would be expressed in Chinese by a sentence which more literally translates as *The one we are passing now is the oldest winery in the region*.

Within the western grammatical tradition, the idea that there is a distinction between the grammatical subject and predicate of a sentence and the subject-predicate structure of the meaning that may be conveyed by this sentence can be traced back at least to the second half of the 19th century, when the German linguists von der Gabelentz (1868) and Paul (1880) used the terms psychological subject and predicate for what Chao calls logical subject and predicate (or topic and comment) respectively. Work of the Czech linguist Vilém Mathesius in the 1920s (e.g. Mathesius 1928) initiated a rich and highly influential tradition of research in this area within the Prague School that continues to the present day see Daneš 1974, Firbas 1966, Sgall, Hajičová and Benešová 1973, Sgall, Hajičová and Panevová 1986 *inter alia*). Also influential has been the seminal work of Halliday (1967) and, within the generative tradition, Chomsky (1971), Gundel (1974/89), Jackendoff (1972), Kuno (1972, 1976), Kuroda (1965, 1972), and Reinhart (1981) *inter alia*. More recent work will be cited below.

Unless otherwise noted, we use the term focus in this paper to refer roughly to the function described by Chao's notion of logical predicate; and we use the term topic to refer to the complement of focus. Topic is what the sentence is about; focus is what is predicated about the topic. Our primary goals will be to clarify some of the major conceptual and terminological issues, to provide an overview of the phenomena that correlate with topic and focus across languages, and to review recent empirical and theoretical developments.

1 Conceptual and Terminological Issues

The literature on topic and focus is characterized by an absence of uniformity in terminology. Besides the earlier terms of psychological/logical subject and predicate, current terms for topic also include theme and ground. In addition to focus, other terms for the complement of topic include comment and rheme. Most authors agree that these concepts, unlike purely syntactic functions such as subject and object, have a consistent semantic/pragmatic value. However, topic and focus are also sometimes defined directly on syntactic structures (e.g. Chomsky 1965, Halliday 1967, Kiss 1998). Consequently, topic, focus and related terms have been used in a dual sense (sometimes by the same author) to refer to syntactic (and phonological) categories as well as their semantic/pragmatic interpretation. Below we address a few of the major conceptual issues.

1.1 Two Given-New Distinctions

The topic-focus distinction has been widely associated with the division between given and new information in a sentence. There has been disagreement and confusion, however, regarding the exact nature of this association. Some of the confusion has resulted from conflating two types of givenness/newness¹. Following Gundel (1988, 1998) we refer to these as referential givenness-newness and relational givenness-newness.

Referential givenness-newness involves a relation between a linguistic expression and a corresponding non-linguistic entity in the speaker/hearer's mind, the discourse (model), or some real or possible world, depending on where the referents or corresponding meanings of these linguistic expressions are assumed to reside. Some representative examples of referential givenness concepts include existential presupposition (e.g. Strawson 1964), various senses of referentiality and specificity (e.g. Fodor and Sag 1982, Enç 1991), the familiarity condition on definite descriptions (e.g. Heim 1982), the activation and identifiability statuses of Chafe (1994) and Lambrecht (1994), the hearer-old/new and discourse old/new statuses of Prince (1992), and the cognitive statuses of Gundel, Hedberg and Zacharski (1993). For example, the cognitive statuses on the Givenness Hierarchy in (2) represent referential givenness statuses that an entity mentioned in a sentence may have in the mind of the addressee.

(2) The Givenness Hierarchy (Gundel, Hedberg and Zacharski 1993)

in			uniquely			type
focus	>	activated	>	familiar	>	identifiable > referential > identifiable

Relational givenness-newness, by contrast, involves a partition of the semantic/conceptual representation of a sentence into two complementary parts, X and Y, where X is what the sentence is about (the logical/psychological subject) and Y is what is predicated about X (the logical/psychological predicate). X is given in relation to Y in the sense that it is independent, and outside the scope of, what is predicated in Y. Y is new in relation to X in the sense that it is new information that is asserted, questioned, etc. about X. Relational givenness-newness thus reflects how the informational content of a particular event or state of affairs expressed by a sentence is represented and how its truth value is to be assessed. Examples of relational givenness-newness pairs include the notions of

¹ Lambrecht 1994 is a notable exception here.

logical/psychological subject and predicate mentioned above, presupposition-focus (e.g. Chomsky 1971, Jackendoff 1972), topic-comment (e.g. Gundel 1974/89), theme-rheme (e.g. Vallduví 1992), and topic-predicate (Erteschik-Shir 1997). Topic and focus as we use these terms here are thus relationally given and new respectively.

Referential givenness/newness and relational givenness/newness are logically independent, as seen in the following examples (from Gundel 1980,1985 respectively).

- (3) A. Who called?
B. Pat said SHE² called.
- (4) A. Did you order the chicken or the pork?
B. It was the PORK that I ordered.

If *SHE* in (3) refers to Pat, it is referentially given in virtually every possible sense. The intended referent is presupposed, specific, referential, familiar, activated, in focus, identifiable, hearer old, and discourse old. But the subject of the embedded sentence is at the same time relationally new, and therefore receives a focal accent here. It instantiates the variable in the relationally given, topical part of the sentence, x called, thus yielding the new information expressed in (3B). Similarly, in (4), the pork is referentially given. Its cognitive status would be at least activated, possibly even in focus, since it was mentioned in the immediately preceding sentence.³ But it is new in relation to the topic of (4), what B ordered

The two kinds of givenness/newness also differ in other respects. Both are properties of meaning representations. However, while relational givenness/newness is necessarily a property of linguistic representations, i.e. the meanings associated with sentences, referential givenness-newness is not specifically linguistic at all. Thus, one can just as easily characterize a visual or non-linguistic auditory stimulus, for example a house or a tune, as familiar or not, in focus or not, and even specific or not. By contrast, the topic-focus partition can only apply to linguistic expressions, specifically sentences or utterances and their interpretations.

Corresponding to this essential difference, is the fact that referential givenness statuses, e.g., familiar or in focus, are uniquely determined by the knowledge and attention state of the addressee at a given point in the discourse. The speaker has no choice in the matter.⁴ Relational givenness notions like topic, on the other hand, may be constrained or influenced by the discourse context (as all aspects of meaning are in some sense), but they are not uniquely determined by it. As the Czech linguist Peter Sgall pointed out a number of years ago, a sentence like *There was a soccer game last night* could be followed by *Poland beat Sweden* or by *Sweden was beaten by Poland*. While the latter two sentences could each have an interpretation where the whole sentence is a comment on some topic not overtly represented in the sentence (possibly established by the preceding utterance) it is also possible in exactly the same discourse context to interpret the first of these sentences as a comment about Poland and the second as a comment about Sweden. Which of these possible interpretations is the intended one depends on the interests and perspective of the speaker.

One place where the linguistic context often seems to determine a single topic-focus structure is in question-answer pairs, which is why these provide one of the more reliable

² Uppercase letters here and elsewhere in the paper indicate location of a prominent pitch accent.

³ The relational notion of 'focus' (as complement of topic) is not to be confused with the referential notion 'in focus', which refers to the cognitive status of a discourse referent. See Gundel 1999 for further discussion.

⁴ The speaker does of course choose what she wants to refer to, or whether she wants to refer at all; but once this choice is made, the referential givenness status of this choice is predetermined by the hearer's knowledge and attention state at a given point in the discourse.

contextual tests for relational givenness-newness concepts. Thus, (5b) is judged to be an appropriate answer to the question in (5a) because the location of the prominent pitch accent is consistent with an interpretation where the topic is who the Red Sox played and the focus is the Yankees. But (5c), where the location of prominent pitch accent requires an interpretation where the topic is who played the Yankees, is not an appropriate response to (5a).

- (5) a. Who did the Red Sox play?
 b. The Red Sox played the YANKEES.
 c. #The RED SOX played the Yankees.
 d. #I love baseball.

The fact that the judgements here are sensitive to linguistic context has no doubt contributed to the widely held view that topic and focus are pragmatic concepts. However, as Gundel (1999b) points out, questions constrain other aspects of the semantic-conceptual content of an appropriate answer as well. All aspects of the meaning of a sentence have pragmatic effects in the sense that they contribute to a relevant context for interpretation. This much is determined by general principles that govern language production and understanding (Sperber and Wilson 1986/95). Thus, (5d) is no more appropriate as an answer to (5a) than (5c) would be, though the exact reason for the inappropriateness is different. The fact that location of the prominent pitch accent has pragmatic effects thus does not itself warrant the conclusion that pitch accent codes a pragmatic concept, any more so than it would follow that the difference in meaning between (5b) and (5d) is pragmatic because the two sentences would be appropriate in different linguistic contexts.

1.2 Referential properties of topic

We noted in the previous section that topic-focus structure is associated with relational givenness-newness in the sense that topic is given in relation to focus and focus represents the new information predicated about the topic. This association is logically independent of referential givenness/newness, which is not necessarily connected to topic or focus at all. As we saw in examples (3)-(4) the focus (relationally new) part of the sentence can contain material that has a high degree of referential givenness. There is however a good deal of empirical evidence for an independent connection between topic and some degree of referential givenness. Virtually the whole range of possible referential givenness conditions on topics has been suggested, including presupposition, familiarity, specificity, referentiality, and focus of attention. Some of the more well-known facts which indicate a connection between topicality and some kind of referential givenness have to do with the ‘definiteness’ or ‘presupposition’ effect of topics. For example, it has often been noted (e.g. in Kuno 1972, Kuroda 1965, *inter alia*) that the phrase marked by a topic marker in Japanese and Korean, necessarily has a ‘definite’ (including generic) interpretation. Thus, in (6), where the subject phrase is followed by the nominative marker *ga*, both the subject and the object can have either a definite or indefinite interpretation. But in (7), where the subject is followed by the topic marker *wa*, it can only be interpreted as definite.

- (6) Neko ga kingyo o ijit-te
 cat NOM goldfish OBJ play with-and
 “The/A cat is playing with the/a goldfish, and...”

- (7) Neko wa kingyo o ijit-te
cat TOP goldfish OBJ play with-and
“The/*A cat is playing with the/a goldfish, and...”

Similarly, in prototypical topic-comment constructions like those in (8)-(13), the topic phrase adjoined to the left of the clause is definite.

- (8) My sister, she’s a High School teacher.
(9) That book you borrowed, are you finished reading it yet?
(10) My work, I’m going crazy. (Bland 1981)
(11) The Red Sox, did they play the Yankees?

Indefinites are generally excluded from topic position unless they can be interpreted generically, as illustrated in (12) (from Gundel 1988).

- (12) a. The window, it’s still open.
b. *A window, it’s still open.⁵

Gundel (1985, 1988) proposes a condition on felicitous topics which states that their referents must be already familiar, in the sense that the addressee must have an existing representation in memory.⁶ Since indefinites aren’t generally used to refer to familiar entities (unless they are intended to be interpreted generically), the familiarity condition on topics provides a principled explanation for facts like those in (6) - (12).⁷ It also captures, in more overtly cognitive terms, Strawson’s (1964) insight that only topical definites necessarily carry an existential presupposition.

The examples in (6)-(12) provide support for a familiarity condition on topics only to the extent that the constructions in question can be assumed to mark topics. These assumptions, though widely held, are not totally uncontroversial. For example, Tomlin 1995 proposes that Japanese *wa* is not a topic marker, but a ‘new information’ marker. He argues that topics are associated with given information, but *wa* is typically used to mark noun phrases referring to entities that are newly introduced or reintroduced into the discourse. Tomlin’s argument rests on the assumption that topics are referentially given in the sense of being the current focus of attention. Similar restrictions on topics are assumed by Erteschik-Shir 1997, who analyzes the left dislocated phrase in constructions like (8)-(12) as a focus rather than a topic, as it is more likely to be something the speaker wants to call the addressee’s attention to than something which is already in the focus of attention. Both Tomlin and Erteschik-Shir base their arguments on conceptions of ‘topic’ that blur the distinction between relational and referential givenness by essentially equating topic with focus of attention.⁸ Their notion of topic is thus closer to ‘continued topic’ or to the

⁵ Note that the unacceptability of (12b) cannot be attributed to the fact that the definite pronoun has an indefinite antecedent, as the following discourse is perfectly acceptable, with *A window* and *it* referring to the same entity: *We can’t leave yet. A window is still open. It’s the one in your bedroom.*

⁶ This is intended as a necessary, not a sufficient, condition on topics.

⁷ The referents of generics would always be familiar, or at least uniquely identifiable, since the addressee could be assumed to have a representation of the class/kind if he knows the meanings of the words in the phrase.

⁸ Tomlin’s aim, in fact, is to argue that topic and focus are unnecessary linguistic constructs which can be reduced to the psychological notion of attention. For Erteschik-Shir, on the other hand, topic is a linguistic notion, defined in relational terms as what the sentence is about (the complement to ‘predication’); however, she also assigns to topics the pragmatic value of instructing the addressee to ‘select a card from the top of the file’, thus essentially building in the referential givenness condition that topics must refer to recently

backward-looking center of Centering Theory (see Walker, Joshi and Prince 1998).

While some authors propose that topics are necessarily activated or even in focus, because they have been mentioned recently in the discourse, others deny that topics must have any degree of referential givenness at all, including familiarity. For example, Reinhart 1981 proposes that topics only have to be referential. She argues that specific indefinites, whose referents are generally not familiar, can appear in dislocated, topic position, as in the following example from Prince (1985).⁹

(13) An old preacher down there, they augured under the grave where his wifewas buried.

To sum up, topics are relationally given, by definition, in the sense that they are what the sentence/utterance is about. They provide the context for the main predication, which is assessed relative to the topic. The association of topics with definiteness across languages suggests that topics must be familiar (or at least uniquely identifiable), and some researchers define topics even more narrowly to include only entities with the highest degree of referential givenness, the current center of attention. Others propose to abandon any referential givenness condition on topics, citing the possibility of indefinite topics as in (13).

1.3 Information focus vs. contrastive focus

As we saw in the previous section, topic is sometimes defined in terms of the referential givenness status of entities, thus resulting in some conceptual confusion between two distinct, though orthogonal, interpretive categories: topic as a relational category (the complement of focus/comment) and topic as the current center of attention. There has been a similar confusion between two conceptually distinct interpretative notions of focus: one of these is relational - the information predicated about the topic; the other is referential - material which the speaker calls to the addressee's attention, thereby often evoking a contrast with other entities that might fill the same position. We refer to these two senses as information focus and contrastive focus respectively.¹⁰ According to Rooth (1985), evoking alternatives is the primary function of focus (cf. Chafe 1976 for a similar position), and the 'contrast set' evoked by the focus provides the locus for focus sensitive operators such as *only*, *even*, and *also*. Other researchers (e.g. Horn 1981, Vallduví 1992) take information status to be primary, and treat contrast as secondary and derivative.

Both information focus and contrastive focus are coded by some type of linguistic prominence across languages, a fact that no doubt has contributed to a blurring of the distinction between these two categories. Information focus is given linguistic prominence, typically (and possibly universally) by means of some sort of prosodic highlighting, because it is the main predication expressed in the sentence - the new information in relation to the topic. It correlates with the questioned position in the relevant (implicit or explicit) *wh*-question or alternative *yes-no* question that the sentence would be responsive to. Thus, in both (14) and (15) below *Bill* expresses the information focus that identifies the one who called the meeting (the topic) as Bill.

(14) A. Do you know who called the meeting?
B. (It was) BILL (who) called the meeting.

(15) Every time we get together I'm the one who has to organize things, but this time was) Bill (who) called the meeting.

mentioned or otherwise salient entities (cf. also the definition of topic in terms of contextual boundedness in Rochemont 1986).

⁹ See also Davison (1984) *inter alia* for the view that specific indefinites can be topics.

¹⁰ The term information focus is used also by Vallduví and Vilkuña 1998, who use the term *kontrast* for contrastive focus.

But marking the information focus is not the only reason to call attention to a constituent. A constituent may also be made prominent because the speaker/writer does not think the addressee's attention is focused on some entity and for one reason or another would like it to be, for example because a new topic is being introduced or reintroduced (topic shift) or because the meaning associated with some constituent is being contrasted, implicitly or explicitly, with something else.¹¹ The example in (16) illustrates a contrastive focus on the topic (the coat). Example (17) has a contrastive focus on the topic (curry) as well as on the information focus (Bill), thus showing that contrastive focus and information focus can coincide (see Gundel 1999a).

(16) We have to get rid of some of these clothes. That COAT you're wearing I think we can give to the Salvation ARMY.

(17) A. Who made all this great food?
B. BILL made the CURRY.

As seen in (14)-(17), both information focus and contrastive focus may be marked with a prominent pitch accent. Thus, (16) and (17) each have two positions of prominent pitch accent, one of these falls on the information focus and the other falls on a contrastive topic.

It is widely assumed (though not uncontroversial) that in languages that use pitch accent to mark information focus, when a sentence contains only a single prominent pitch accent (as in 14 and 15 above) this will necessarily fall on the information focus (see Gundel 1978, Schmerling 1976, Selkirk 1984, Vallduví and Vilkuna 1999, Zacharski 1993 inter alia). Gundel (1999) maintains that this is because all sentences have an information focus, as an essential part of the function of sentences in information processing; but not all sentences/utterances have a contrastive focus, the latter being determined primarily by a speaker/writer's intention to affect the addressee's attention state at a given point in the discourse. However, as Büring (1999) points out, a prominent pitch accent inside the topic is obligatory in some discourse contexts. Büring in fact restricts the term topic to topics that receive a prominent pitch accent (his S-topics). Topics for him are "simply an (improper) part of the non-focus (p. 145)," and non-contrasted material that is not part of the information focus is called background. Thus, in (17) for example, the topic would be *Bill*, the focus would be *the curry* and *made* would be the background.¹²

Similarly, both contrastive focus and information focus may be syntactically coded by placing the relevant constituent in a syntactically prominent position. This has resulted in some confusion in the literature, with the term 'topicalization' being used to mark preposing of (contrastively focused) topics, as in (16) above, as well as preposing of information focus, as in (18).¹³

(18). A. Which of these clothes do you think we should give to the Salvation Army?
B. That COAT you're wearing (I think we can give away).

¹¹ See Zacharski 1993 and Vallduví and Zacharski 1994 for more detailed discussion of reasons for assigning phonological prominence.

¹² The view that sentences may have either a bipartite or a tripartite information structure is shared also by other authors for whom topic and focus are primarily structural notions, defined on surface syntactic forms (e.g. Dik 1978, Vallduví 1992, Vallduví and Engdahl), though both the terminology and the conceptual details of the analyses differ.

¹³ Following Ward (1988) we use the term 'preposing' here as a convenient label for constituents that appear to the left of their canonical position.

The sentences in (16) and (18) are similar in that both have a prosodically prominent sentence initial object (that coat you're wearing) which may be in contrast with other objects in some contextually relevant set. But the information status of the preposed objects is different. In (16), the coat is a topic, possibly (though not necessarily) contrasting with other members of the set of clothes that are candidates for being disposed of and to which the predicate 'we can give to the Salvation Army' would or would not apply. In (18) the coat is part of the information focus, the new information identifying objects that would be included in the set described by the the topic (clothes that would be suitable to give away) and possibly contrasting with other clothes that could also be included in that set.¹⁴ The type of pitch accent on the two preposed phrases is different as well, as will be discussed in section 2.

2 Phenomena

2.1 Focus and intonation

The association between prosodic prominence and focus has been shown to hold in a variety of typologically and genetically diverse languages, and is widely believed to be universal.¹⁵ In some languages there is no type of prosodic prominence that distinguishes information focus from contrastive focus (including contrastive topic). Thus, according to Vallduví and Vilkuna (1998:89), information focus (their rheme) and contrast (their kontrast) are 'associated with a single high tone accent' in Finnish; and the distinction between the two is coded syntactically rather than prosodically. Similarly, Fretheim (1987, 1992a, 1992b, forthcoming) argues that there is no particular pitch contour that encodes topic or focus in Norwegian. When a Norwegian unit contains two fundamental frequency maxima for maximum prosodic prominence, either one of them could be the information focus. Thus (19) where there is a prosodically prominent subject as well as a prosodically prominent direct object could be a statement about Fred or a statement about the beans. There is no intonational phenomenon in Norwegian that enables the hearer to uniquely identify topic and focus in an utterance of (19). This must be determined by pragmatic inference alone.

(19) FRED spiste BØNNENE
 Fred ate the beans
 "Fred ate the beans"

Similarly, the Norwegian sentence in (20) produced with the highest degree of prosodic prominence on *de bildene* ('those pictures') and on *etterpå* ('afterwards') means either (a) 'Looking at those pictures' (topic) 'is something you must postpone till some later time' (focus), or (b) 'Afterwards' (topic) 'you have to take a look at those pictures' (focus).

¹⁴The two constructions exemplified by (17) and (19) also differ in other properties. For example, the referent of a preposed topic must be already familiar to the addressee, and is thus typically definite or generic. But a preposed information focus has no such restriction, and can thus be definite or indefinite. See Gundel (1974/89, 1999) and Vallduví and Vilkuna (1998) for more detailed discussion and empirical support for a conceptual distinction between information focus (called semantic focus in Gundel 1999) and contrastive focus.

¹⁵ Gundel (1988) notes, however, that one of the languages in the sample she surveyed, Hixkaryana (Derbyshire 1979, cited in Dooley 1982). was reported not use prosody to mark focus.

(20) Du må se på de BILDENE ETTERPÅ.
you must look at those pictures afterwards
“You have to look at those pictures afterwards.”

However, in some languages, information focus and contrastive focus are associated with distinct pitch accents. In English, for example, information focus is coded by what Bolinger (1961) and Jackendoff (1972) call an A accent (Pierrehumbert’s simplex H* tone). Contrastive topics (and possibly contrast in general) is typically marked by what Bolinger and Jackendoff call a B accent (Pierrehumbert’s complex L + H* tone), an accent pattern also used for functions not directly related to topic or focus.¹⁶

Elements within the prosodic domain of the H* accent are interpreted as part of the information focus and elements outside that domain are interpreted as part of the topic.¹⁷ The projection of information focus to higher constituents results in topic-focus ambiguities. Thus, a sentence like (5b), with an H* pitch accent on the direct object, is an appropriate answer to the question in (5a) because it has a possible interpretation where the information focus includes only the direct object. But the same sentence also has an interpretation where the focus is the VP *played the Yankees* as well as an interpretation where the whole sentence is focus, for example as an answer to *Did anything interesting happen today?* This latter interpretation corresponds to what Marty (1918) calls a thetic judgement (see also Kuroda 1972), and what Schmerling (1976) calls an ‘all-news’ sentence. However, (5c), with an H* pitch accent on the subject, *Red Sox*, has a so-called ‘narrow focus’ interpretation, where the information focus includes only the subject.¹⁸

Lambrecht (1994:133) provides an especially compelling example of the role of prosody in topic-focus interpretation. He notes that most people, when asked to interpret a written sentence like (21) in the absence of any contextual cues, would assign a generic interpretation, where the topic and focus coincide with the grammatical subject and predicate respectively.

(21) Nazis tear down antiwar posters.

One might imagine a context, for example, where (21) is uttered during a discussion about Nazis, where Nazis is the topic and what is predicated about Nazis (the focus) is that they tear down antiwar posters. Another likely interpretation, which Lambrecht doesn’t consider here, is one where the whole sentence is focus, for example as a newspaper heading, where the topic is simply what happened today. Both these interpretations would be consistent

¹⁶It is widely assumed that the simplex H* accent specifically codes information focus, whereas L + H* also has other functions including the marking of contrastive information. However, the exact distribution of the two pitch accents is still a matter of some controversy (see Zacharski 1993 and Vallduví and Zacharski 1994 for further discussion of some of these points). Resolution of the controversy awaits the result of detailed empirical studies investigating the relation between topic-focus structure and prosody in naturally occurring discourse (see, for example, Hedberg and Sosa 2001).

¹⁷The identification of topic with material outside the domain of focus only holds if topic and focus are complementary relational categories, as we assume here. This position is not shared by all authors. For example, as noted in the previous section, Büring (1999) considers topic to be only a part of non-focal material. Others define topic positionally, for example as the first element in the sentence (Halliday 1967), independent of its focal status.

¹⁸Focal accent on the subject can, however, project to the whole sentence with certain intransitive predicates, as in ‘all-news’ sentences like *The DOOR’s open*, *Her UNCLE died*, *My CAR broke down*, all of which would be appropriate responses to *What happened?* or *What’s wrong?*, where the whole sentence is focus and the topic is not overtly expressed at all. See Ladd (1978), Schmerling (1976), Selkirk (1984), Zacharski (1993) for more detailed discussion.

with an H* accent on the direct object (ANTIWAR posters), the default (wide focus) accentual pattern that people normally assume when presented with written sentences in isolation. In fact, Lambrecht notes, this sentence was “written with a felt pen across a poster protesting the war in Central America. The poster had been partly ripped down from the wall it had been glued onto.” Provided with this additional contextual information, the interpretation of the sentence changes, as does the accentual pattern we assign to it. The prominent H* pitch accent now shifts to the subject and the interpretation is: people who tear down antiwar posters are Nazis. The situation here is reminiscent of Chao’s exchange between the guide and the tourist in (1).

2.2 Topic, focus and syntactic structure

Topic and focus have been associated with various syntactic structures across languages, especially ones where a constituent has been ‘displaced’ from its canonical position in a clause to occupy a syntactically more prominent position, as in the English examples in (22b)-(22d).

- (22) a. Fred ate the beans.
b. The beans, Fred ate.
c. It was the beans that Fred ate.
d. The beans, Fred ate them.
e. Fred ate them, the beans.

However, as with pitch accent, the relation between surface syntactic form and topic-focus structure is complex and there is no simple one-to-one correlation between topic or focus and particular syntactic constructions either across languages or even within particular languages. For example, as noted in section 2.1 (examples (17) and (19)), the sentence-initial constituent in an example like (22b) may refer either to the topic or to the information focus. The constituent *the beans* in (22b) could be a contrastive topic (e.g. as an answer to *What about the beans? Who ate them?*) or an information focus (e.g. as an answer to *What did Fred eat?*).¹⁹ Corresponding to this distinction, as already noted, the sentence-initial phrase would also have two different pitch accents in English, but this would not be the case in Finnish or Norwegian, for example. In either case, non-canonical placement of constituents in sentence initial position is not in itself uniquely associated with either topic or focus. Birner and Ward (1998, p. 95) argue that preposing in English is associated with the more general function of marking the preposed constituent as representing ‘information standing in a contextually licensed partially ordered set relationship with information invoked in or inferable from the prior context.’ This contextually determined function is stated solely in terms of referential givenness, and is thus independent of the topic-focus distinction.

The mapping between topic-focus structure and cleft sentences like those in (22c) is also less straightforward than has often been assumed. It is widely accepted that in canonical clefts with a single prominent pitch accent on the clefted constituent (*the beans* in (22c)), the clefted constituent is the information focus and the open proposition expressed by the cleft clause (*Fred ate x* in (22c)) is presupposed and topical.²⁰ (22c), with a

¹⁹Within the generative literature, the conflation of topic preposing and focus preposing can be traced back to the classic work of Ross (1967) who derives both by a single rule of topicalization. Gundel (1974/89) while (misleadingly) referring to the two constructions as topic topicalization and focus topicalization, proposes distinct analyses for the two, where only topics occupy a topic position.

²⁰The equation of presupposition and topic again depends on an analysis such as the one we are assuming here that views topic and focus as complementary relational categories (cf. fn. 17). The equation does not require that the topic be construed as an open proposition rather than an entity (see Gundel 1985). But see Lambrecht (1994) for a different view of the relation between topic and presupposition.

prominent H* pitch accent on *beans* would thus be an appropriate response to *What did Fred eat*, for example. But it would be unacceptable as a response to *Who ate the beans?* or *Can you tell me something about the beans?* But it is important to note that the facts here follow independently from the assumption that a single H* pitch accent necessarily falls on the information focus (see section 2.1). It does not show that a clefted constituent necessarily codes an information focus or that a cleft clause necessarily codes the topic. In fact, not all clefts have only a single prominent pitch accent on the clefted constituent. In English, the H* accent associated with information focus may also fall within the cleft clause. Hedberg (1990) argues that the cleft clause is also the locus of the information focus in such ‘informative presupposition clefts’ (Prince 1978).²¹ When the information focus is on the whole sentence, it includes both the cleft clause and the clefted constituent, as in (23).

- (23) [Beginning of a newspaper article] **It was just about 50 years ago that Henry Ford gave us the weekend.** On September 25, 1926, in a somewhat shocking move for that time, he decided to establish a 40-hour work week, giving his employees two days off instead of one. [Philadelphia Bulletin, cited in Prince 1978]

In other cases, Hedberg argues, the information focus includes only the material inside the clause while the clefted constituent refers to the topic, as in (24).

- (24) The federal government is dealing with AIDS as if the virus was a problem that didn't travel along interstate highways and was none of its business.
It's this lethal national inertia in the face of the most devastating epidemic of the late 20th century that finally prompted one congressman to strike out on his own.
(Minneapolis Star and Tribune, cited in Hedberg 1990)

It seems clear then that while clefts serve various information structural functions, there is no unique one-to-one mapping between the clefted constituent and the information focus of the sentence.

The structure most widely and consistently associated with topic marking is one where a constituent referring to the topic of the sentence is adjoined to the left or right of a full sentence comment/focus. Such prototypical topic-comment constructions, exemplified in (22d,e) and in (8)-(11) above are presumably found in all human languages, and are relatively unmarked structures in so-called topic-prominent languages like Chinese and Japanese (Li and Thompson 1976). Following a tradition that goes back to Ross (1967) we use the term left dislocation here to refer to such constructions when a constituent is left-adjoined to a sentence containing a coreferential copy, as in (22c) and right dislocation when the constituent is right adjoined as in (22e).

In languages like Japanese and Korean that mark topics morphologically, such markers are typically associated with phrases that are adjoined to the left (and sometimes to the right) of a clause, and the phrases so marked also exhibit referential properties, specifically definiteness effects, that have been associated with topics, as noted in section 1. Moreover, left and right dislocated phrases, unlike preposed phrases as in (22b), cannot carry the only high pitched accent in the sentence, additional evidence that they mark topics.

Despite this evidence, serious empirical challenges to the assumption that dislocated phrases refer to topics come from Ellen Prince and other researchers who base their analyses on the distribution of these constructions in naturally occurring discourse. For example, Prince (1998) argues that left dislocation does not consistently code topic. Rather, she proposes that this construction serves a variety of different functions such as marking contrast and keeping phrases referring to a discourse new entity out of subject position.

²¹ According to Ball (1991), ‘informative presupposition’ clefts are a relatively recent development in the history of English.

However, as argued in Gundel (1999b) Prince's insights about why speakers might use left dislocation in particular discourse contexts are in themselves not inconsistent with the grammatical claim that left and right dislocation partition a sentence into two syntactic constituents, a phrase that refers to the topic and an adjoined clause whose content is the comment/focus about that topic. On the contrary, such an analysis may help provide an explanation for some of the specific discourse functions that Prince posits.

A more serious challenge to the view that left dislocation marks topics is posed by Prince's findings that non-referential, indefinite phrases may occupy left dislocated position, as in (25) and (26).

(25) Most middle-class Americans, when they look at the costs plus the benefits, they're going to be much better off. (Prodigy 1993, cited in Prince 1998)

(26) Any company, if they're worth 150 million dollars, you don't need to think of (Terkel 1974, cited in Prince 1998).

While there is still some controversy about the referential givenness properties of topics (see section 1.1), it is generally agreed that topics must be at least referential. There must be an individuated entity for the utterance, sentence or proposition to be about, and in order for truth value to be assessed in relation to that entity. Gundel (1999) argues, however, that sentences like those in (26) and (27) are not necessarily counterexamples to the view that left dislocated phrases mark topics, if a distinction is made between topic as a syntactic category and topic as a semantic/pragmatic category. Gundel notes that dislocated phrases like those in (25) and (26) are strong NPs in the sense of Milsark (1977) and are pronounced with stress on the quantifier. As is well known, such phrases, which often have a partitive reading (which includes an overt or covert definite phrase), typically have the same presupposition effect as definite Nps. Gundel proposes that the semantic/pragmatic topic associated with dislocated phrases of this type is the entity that is quantified (i.e. the N-set), not the whole quantified phrase. Thus, (25) and (26) could be paraphrased as (25') and (26') respectively (see also Gundel 1974/89).

(25') (As for) Middle-class Americans, when most of them look at the costs plus the benefits, they're going to be much better off.

(26') (As for) Companies, if any one of them is worth 150 million dollars, you don't need to think of

Under such an analysis, the quantifier in (25) and (26) is part of the syntactic topic phrase, but it is not part of the semantic/pragmatic topic. If the topic of (25) is the middle class Americans and the topic of (26) is companies, the topic of these sentences is not only referential; it is also familiar since the addressee can be assumed to have an existing representation of the intended referent in memory.²²

²² Gundel (1999) argues that treating the nominal in a phrase headed by a strong quantifier as potentially referring to a topic that doesn't include the quantifier also makes it possible to account straightforwardly for examples like those in (i) and (ii), discussed in Reinhart (1995), without giving up the generalization that topics must refer to familiar entities..

(i) Two American kings lived in New York.

(ii) There were two American kings who lived in New York.

Reinhart points out that a sentence like (i) is judged to be false by some speakers and neither true nor false by others, while (ii) is easily judged as simply false by all speakers. Her proposed explanation for such facts, based on Strawson's insight that only topics are associated with presupposition (because they are the

Strong evidence for the topic marking function of right dislocation comes from Norwegian. In addition to ‘canonical’ right dislocation exemplified by the English sentence in (22e), where a full nominal phrase is right adjoined to a clause that contains a coreferring pronoun, Norwegian, like other Scandinavian languages, also allows right dislocation of a pronoun with a full coreferring nominal inside the clause (Fretheim 1995, 2001), as in (27).

- (27) a. ISKREMEN har JEG kjøpt.
 the.ice.cream have I bought
- b. ISKREMEN har JEG kjøpt, den.
 the.ice.cream have I bought it
 ‘I bought ice cream’

The existence of such constructions, which Fretheim (In press) notes are more frequent in spoken Norwegian than in Swedish and Danish, clearly shows that the right dislocated phrase is not merely an ‘afterthought’, possibly functioning to help the addressee identify the intended referent of an intraclausal pronominal. Fretheim shows that such constructions, when they are associated with a particular prosodic pattern, function rather to encode the topic-focus structure of an utterance, as the dislocated pronoun necessarily refers to the topic.²³

The topic marking function of the construction exemplified in (27b) is crucial in disambiguating the topic-focus structure since, as noted in section 2.1, Norwegian does not have a pitch accent that is uniquely correlated with information focus. Thus, the ‘preposed’ object *iskremen* in (27a) could be the topic (e.g. as a response to *I know Tor bought cake, but do we have ice cream?* - or it could be the focus (e.g. answering *What did YOU buy?*). Unlike in English, for example, the type of pitch accent would not be different in the two cases. But (27b), with a dislocated pronoun *den* ‘it’, can only have the former interpretation.

Right dislocation of pronouns, and resulting topic-focus determination, can also play a role in disambiguating between two otherwise truth-conditionally different interpretations, as seen in (28) and (29)²⁴.

- (28) SCOTT heter Glenn til ETTERNAVN.
 Scott is.named Glenn as surname
 a. “Scott’s surname is Glenn”
 b. “Scott is the surname of Glenn”
- (29) a. SCOTT heter Glenn til ETTERNAVN, han.
 Scott is.named Glenn as surname he
 “Scott’s surname is Glenn”

locus of truth value assessment), is that *two American kings* in (i) may or may not be interpreted as topic, depending on the context of utterance. The same phrase in (ii), however, can never be a topic since topics are excluded from post-copular position in existential sentences. Gundel maintains that it is not *two American kings*, but only the phrase *American kings* which refers to the topic in (i), and that this is possible only under the partitive interpretation, when the quantifier is stressed. This is also the interpretation which yields the truth value gap.

²³ Fretheim also notes a further referential givenness restriction on right dislocated pronouns, and Norwegian right dislocation in general, namely that the referent of the right dislocated phrase must be already activated before the sentence is uttered. See Gundel (1988) and Ziv and Grosz (1994) for similar restrictions on right dislocation

²⁴ For purposes of illustration, we assume prominent pitch accents here on *Scott* and *etternavn*. However, other intonation patterns would yield a similar ambiguity

- b. SCOTT heter Glenn til ETTERNAVN, det.
 Scott is.named Glenn as surname it
 “Scott is the surname of Glenn.”

The Norwegian verb *hete* ‘be named’ (cf. German *heissen*) takes two arguments. One of these, the subject, refers to an individual and the other, the complement, refers to a name. Because Norwegian is a V2 language, (28) is ambiguous between the interpretation in (29a) where Scott is the subject (literally, Scott is named Glenn as a surname) and the one in (29b), where *Scott* is a preposed complement (literally Scott Glenn is called as a surname). This ambiguity is neutralized, however, in the examples in (29). Since the right dislocated pronoun *han* ‘he’ in (29a) can only refer to a person, (29a) must have an interpretation where the topic is the person Scott. And since the right dislocated pronoun *det* ‘it’ in (29b) can only refer to the name, (29b) must have an interpretation where the topic is the name Scott²⁵.

2.2. Meaning and truth conditional effects of topic-focus structure.

The idea that topic-focus structure can affect truth conditions goes back at least to the work of Strawson (1950) who maintained that sentences (more specifically the statements made by sentences) lack a truth value when their presuppositions are not met. Strawson (1964) argues that definite descriptions are associated with presuppositions only if they are topics. Thus, a sentence like (30a), where the grammatical subject coincides with the topic, lacks a truth value if the subject has no existing referent; but (30b), where the grammatical subject is focus (and the topic is bald people) is simply false in that situation.

- (30) a. The King of France is BALD.
 b. The King of FRANCE is bald.

The difference here is subtle, and Strawson’s ideas have not been unanimously embraced by linguists or logicians (see Horn 1989 for detailed and insightful discussion). However, difference in topic-focus partition can have profound semantic effects, even if one doesn’t assume a multi-valued logic. Some well known examples taken from authors working in a variety of frameworks are given in (31)-(34).

- (31) a. DOGS must be carried. (no dogless people allowed)
 b. Dogs must be CARRIED. (if you have a dog with you, you must carry it)

(Halliday 1967)

- (32) a. Only voiceless OBSTRUENTS occur in word final position. (no final sonorants)
 b. Only VOICELESS obstruents occur in word final position. (final sonorants ok)

(Lakoff 1971)

- (33) a. Clyde gave me the TICKETS by mistake. (the tickets were a mistake)
 b. Clyde gave ME the tickets by mistake. (giving ME the tickets was a mistake)

(Dretske 1972)

²⁵ Fretheim (2000) discusses two other types of right dislocated pronoun construction in Norwegian, with different prosodic patterns from the type discussed above, and suggests that these may have other functions unrelated to topic marking.

- (34) a. The largest demonstrations took place in PRAGUE in November (in)1989.
 (there were no larger demonstrations anywhere)
- b. The largest demonstrations took place in Prague in NOVEMBER (in) 1989.
 (there may have been larger demonstrations in Budapest at that time)

(Partee 1991)

Gundel (1998) maintains that in these and similar examples, it is location of information focus (her semantic focus) and not purely contrastive focus that results in the truth conditional effects. This is because information focus is a relational notion that determines the main predication in the sentence, that predication being assessed relative to the topic. Purely contrastive focus has no truth-conditional effects, as seen by comparing the sentences in (34) with (35) (small caps here indicate the L H* accent that marks contrast, including contrastive topics; large capital letters indicate the H* accent associated with information focus.)

(35) The largest demonstrations took place in PRAGUE in NOVEMBER (in) 1989.

Thus, (34a) would be false if the largest demonstrations in November in 1989 had been in one of the other cities under consideration, for example Budapest. But both (35) and (34b) could still be true in this situation as long as the largest demonstrations in Prague were in November 1989. This is so because the topic-focus structure of (35) is the same as that of (34b). The topic is when the largest demonstrations took place in Prague in 1989 and the focus/comment is that this was in November. The topic of (34a), on the other hand, is the location of the largest demonstrations in November 1989 and the focus is that this was in Prague. The only difference between (34b) and (35) is a contrastive focus on Prague in (35) which explicitly evokes a contrast set of other cities that Prague is being compared with, but this difference alone has no effect on truth conditions.

3. Conclusion.

As Reinhart (1981) writes in the introduction to her classic paper on topic, topics “are a pragmatic phenomenon which is specifically linguistic.” Topic and focus are linguistic categories in the sense that their expression and interpretation cannot be reduced to general principles governing human interaction or to other cognitive/pragmatic abilities that are independent of language. While human languages differ in the manner and extent to which topic and focus are directly and unambiguously encoded by linguistic form (syntax, prosody, morphology, or some combination of these), all human languages appear to have some means of coding these categories. Topic-focus structure is thus constrained, and in this sense partly determined, by linguistic form across languages. In addition, differences in topic-focus structure alone sometimes correlate with profound differences in meaning, with corresponding truth-conditional effects. It is not surprising then that most accounts of topic and focus have built these concepts into the grammar, as part of the syntax and/or semantics (interpreted by the phonology in the case of prosody) or as a separate information structural component.

At the same time, however, it is evident that not all the phenomena associated with topic and focus can be directly attributed to the grammar. Topic and focus are pragmatically relevant categories, with clear pragmatic effects, including the appropriateness/inappropriateness of sentences with different possibilities for topic-focus interpretation in different discourse contexts. Indeed, the attempt to explain a speaker’s ability to choose among various morphosyntactic and prosodic options and the

corresponding ability of speakers to judge sentences with different topic-focus structure as more or less felicitous in different contexts, has been one of the primary motivations for introducing these categories into linguistic analysis and theory. Contrary to what is sometimes assumed, however, the fact that topic and focus have pragmatic effects does not in itself make them essentially pragmatic. All aspects of meaning (as well as aspects of linguistic form) have pragmatic effects, in the sense that they influence a speaker/hearer's ability to select a relevant context for interpretation (see Sperber and Wilson 1986/95).

The failure to clearly distinguish between properties of topic and focus that are grammar-driven and those that are purely pragmatic is especially evident in attempts at topic and/or focus identification, which typically involve taking a sentence or part of a sentence and testing its appropriateness in a particular discourse context. Such tests often fail to uniquely identify the topic or focus of a given sentence, even in the simplest cases. Thus, the fact that the sentence in (37b) would be an appropriate response to the *wh*-question in (37a) shows that (37b) has a possible topic-focus structure where the topic is Jane or what Jane is doing and the focus/comment is that she is walking her dog.

- (37)a. What's Jane doing?
b. Jane's walking her DOG.
c. As for Jane, she's walking her DOG..

The fact that someone could report an utterance of (37b) (in any discourse context) as *Someone said about Jane that she's walking her dog* (see Reinhart 1981) would provide further evidence for this analysis, as would the fact that (37b) is an appropriate response to *What about Jane?* (see Gundel 1974/89). But none of these tests necessarily shows that Jane **must** be analyzed as the topic of (37b). Even in this discourse context, (37b) could have an all-focus (thetic) interpretation.

Similarly, the fact that (37c) is an appropriate response to (37a), and an appropriate paraphrase of (37b), only when there is an alternative set that Jane is contrasted with does not mean that Jane can be the topic of either (37b) or (37c) only under this condition. The failure of such tests to provide a fool-proof procedure for identifying topics has led some authors to question the linguistic relevance of this concept (cf. Prince 1998). But such tests were in fact never intended to serve as necessary conditions for topic or focus. At best, they can help to determine when a particular topic-focus analysis is possible. Pragmatic tests can't be used for identifying linguistic categories, because pragmatics is not deterministic.

Assuming a relevance-theoretic pragmatics (Sperber and Wilson 1986/89), Gundel (1999b) proposes that topic-focus structure is an essential component of the semantic/conceptual representation associated with natural language sentences by the grammar, as it is basic to the information processing function of language. This representation and the expressed proposition which is an 'enrichment' of it, is a topic-focus structure, where the topic is what the sentence is about and the comment/focus is the main predication about the topic. Topic-focus structure is exploited at the grammar-pragmatics interface, where information expressed in the proposition is assessed in order to derive 'contextual effects', assessment being carried out relative to the topic. Within this framework, Gundel argues, it is possible to reconcile the different positions concerning referential properties of topics (see section 1.1). A semantic/conceptual representation will be well-formed provided that the topic is referential, and thus capable of combining with a predicate to form a full proposition. This much is determined by the grammar. It follows from what speakers know about the way sentence forms are paired with possible meanings in their language. Utterances with non-familiar topics may fail to yield adequate contextual effects, since assessment can only be carried out if the processor already has a mental representation of the topic. Such utterances are thus often pragmatically deviant, even if they are grammatically well-formed. Thus, while the referentiality condition on topics is a semantic, grammar-based, restriction, the stronger familiarity condition on topics is

pragmatic and Relevance-based; it applies at the grammar-pragmatics (conceptual-intentional) interface.

The important question then is not whether topic and focus are basically grammatical or pragmatic concepts, but which of their properties are purely linguistic, i.e. grammar-driven, and which are derivable from more general pragmatic principles that govern language production and understanding.

References

- Ball, C. N. 1991. *The historical development of the it-cleft*. University of Pennsylvania PhD dissertation.
- Birner, B. J. and G. Ward. 1998. Information status and noncanonical word order in English. Amsterdam:John Benjamins.
- Bland, S.R.K. 1980. Topic/comment sentences in English. *Cornell Working Papers in Linguistics* 2:32-49.
- Bolinger, D. 1961. Contrastive accent and contrastive stress. *Language* 37:87-96.
- Bosch, P. and R. van der Sandt (eds.), *Focus in natural language processing*. Cambridge: Cambridge Univ. Press.
- Büring, D. 1999. Topic. In Bosch and van der Sandt (eds.).
- Chafe, W. L. 1994. Discourse, consciousness, and time. Chicago:Chicago University Press.
- Chao, Y. R. 1968. A grammar of spoken Chinese. Berkeley:University of California Press.
- Chomsky, N. 1965. *Aspects of the theory of syntax*. Cambridge, Mass.:MIT Press.
- Chomsky, N. 1971. Deep structure, surface structure and semantic interpretation. In D. Steinberg and L. Jakobovits (eds.), *Semantics, an Interdisciplinary Reader in Linguistics, Philosophy and Psychology*, 183-216, Cambridge:Cambridge Univ. Press.
- Culicover, P. and L. McNally (eds.), *The limits of syntax*. Syntax and Semantics 29. New York:Academic Press
- Daneš, F. 1974. Papers on functional sentence perspective. The Hague:Mouton.
- Davison, A. 1984. Syntactic markedness and the definition of sentence topic. *Language* 60, 797-846.
- Derbyshire, D.C. 1979. Hixkaryana Syntax. Doctoral dissertation. University of London.
- Dretske, F. 1972. Contrastive statements. *Philosophical review*. 81:411-437.
- Dik, S. C. 1978. Functional grammar. Amsterdam:North Holland.
- Dooley, R.A. 1982. Options in the pragmatic structuring of Guarani sentences. *Language* 58.2:307-31.
- Enç, M. 1991. The semantics of specificity. *Linguistic Inquiry* 22.1-25.
- Fodor, J. D., and I. Sag. 1982. Referential and quantificational indefinites. *Linguistics and philosophy* 5.355-398.
- Erteschik-Shir, N. 1997. *The Dynamics of Focus Structure*. Cambridge: Cambridge Univ. Press.
- Firbas, J. 1966. On defining the theme in functional sentence analysis. In F. Danes et al (eds.), *Travaux linguistiques de Prague*. Vol. 1. University of Alabama Press, 267-280.
- Fretheim, T. 1987. Pragmatics and intonation. In J. Verschueren and M. Bertuccelli-Papi, (eds.), *The Pragmatic Perspective*. Amsterdam: John Benjamins, 395-420.
- Fretheim, T. 1992a. Grammatically underdetermined theme-rheme articulation. *ROLIG* no. 49, Roskilde University Center, Denmark.
- Fretheim, T. 1992b. Themehood, rhemehood and Norwegian focus structure. *Folia Linguistica* XXVI/1-2, 111-150.

- Fretheim, Thorstein. In Press. The interaction of right-dislocated pronominals and intonational phrasing in Norwegian. In W. van Dommelen and T. Fretheim, eds. *Nordic Prosody: Proceedings of the VIIIth Conference*. Frankfurt a.M.: Peter Lang.
- Gabelenz, G. von der. 1868. Ideen zur einer vergleichenden Syntax: Wort- und Satzstellung. *Zeitschrift für Völkerpsychologie und Sprachwissenschaft*.6:376-384.
- Gundel, J. K. 1974. *The Role of Topic and Comment in Linguistic Theory*. Ph.D. Dissertation, University of Texas at Austin. Published by Garland, 1989.
- Gundel, J. K. 1978. Stress, pronominalization and the given-new distinction. *University of Hawaii Working Papers in Linguistics* 10.2:1-13.
- Gundel, J. K. 1980. Zero NP-anaphora in Russian: a case of topic-prominence. In *Proceedings from the 16th Meeting of the Chicago Linguistic Society. Parasession on Anaphora*, pp. 139-146. Vol. 10, No. 2, 1-13.
- Gundel, J. K. 1985. Shared knowledge and topicality. *Journal of Pragmatics*, 9: 83-107.
- Gundel, J. K. 1988. Universals of topic-comment structure In M. Hammond, E. Moravcsik and J. Wirth (eds.), *Studies in syntactic typology*, 209-239, Amsterdam:John Benjamins, 209-239..
- Gundel, J. K. 1999a. On different kinds of focus. In Bosch and van der Sandt (eds.), 293-305.
- Gundel, J. K. 1999b. Topic, focus and the grammar pragmatics interface. In J. Alexander, N.Han and M. Minnick (eds.), *Proceedings of the 23rd Annual Penn Linguistics Colloquium. Penn Working Papers in Linguistics*, vol. 6.1, pp. 185-200
- Gundel, J. K., N. Hedberg and R. Zacharski. 1993. Cognitive status and the form of referring expressions in discourse. *Language* 69:274-307.
- Halliday, M.A.K. 1967. Notes on transitivity and theme in English. Part II. *Journal of Linguistics* 3:199-244.
- Hedberg, N. 1990. *Discourse pragmatics and cleft sentences in English*. Minneapolis, MN: University of Minnesota dissertation
- Hedberg, N. 2000. The referential status of clefts. *Language* 76: 891-920.
- Heim, I. R. 1982. *The semantics of definite and indefinite noun phrases*. Amherst: University of Massachusetts dissertation.
- Horn, L. R. 1981. Exhaustiveness and the semantics of clefts. *NELS* 11, 125-142.
- Horn, L. R. 1989. *A natural history of negation*. Chicago: University of Chicago Press.
- Jackendoff, R. 1972. *Semantic interpretation in generative grammar*. Cambridge: MIT Press.
- Kiss, K. É. 1998. Identificational focus versus information focus. *Language* 74.245-273
- Kuno, S. 1972. Functional sentence perspective. *Linguistic Inquiry* 3.3, 269-320.
- Kuroda, S. Y. 1965. *Generative grammatical studies in the Japanese language*. Cambridge MA: MIT dissertation.
- Kuroda, S. Y. 1972. The categorial and thethetic judgement: evidence from Japanese syntax. *Foundations of Language* 9:153-185.
- Ladd, D. R. Jr. 1978. *The structure of intonational meaning: evidence from English*. Bloomington: Indiana University Press.
- Lakoff, G. 1971. On generative semantics. In D. Steinberg and L. Jakobovits (eds.), *Semantics: an interdisciplinary reader in linguistics, philosophy and psychology*. Cambridge: Cambridge University Press, 232-296.
- Lambrecht, K. 1994. *Information structure and sentence form: topic, focus and the mental representation of discourse referents*. Cambridge:Cambridge University Press.
- Li, C.N. and S.:A. Thompson. 1967. Subject and topic: a new typology of language. In C. N. Li (ed.), *Subject and topic*. New York: Academic Press.
- Marty, Anton. 1918. *Gesammelte Schriften.*, vol. II, part 1. Abteilung Halle. Max Niemeyer Verlag.
- Mathesius, V. 1928. On linguistic characterology with illustrations from Modern English. *Actes du Premier Congrès International de Linguistes à La Haye*, pp. 56-63. (Reprinted

- in J. Vachek, (ed.). 1964. A Prague School reader in linguistics. Bloomington, IN: Indiana University Press, 59-67).
- Milsark, G. 1977. Toward an explanation of certain peculiarities of the existential construction in English. *Linguistic Analysis* 3, 1-30.
- Partee, B. 1991. Topic, focus and quantification. *Cornell Working Papers in Linguistics* 10 (SALT I), 159-187.
- Paul, H. 1880. *Prinzipien der Sprachgeschichte*. Tübingen:Niemeyer.
- Prince, E. F. 1978. A comparison of *wh*-clefts and *it*-clefts in discourse. *Language* 54.883-906.
- Prince, E. F. 1985. Fancy syntax and shared knowledge. *Journal of Pragmatics*.9.1:65-81.
- Prince, E. F. 1992. The ZPG letter: subjects, definiteness, and information status. In *Discourse description: diverse analyses of a fund raising text*, ed. S. Thompson and W. Mann. Amsterdam:John Benjamins , 295-325.
- Prince, E.F. 1998. On the limits of syntax, with reference to left-dislocation and topicalization. In Cullicover and McNally (eds.), 261-302.
- Reinhart, T. 1981. Pragmatics and linguistics. An analysis of sentence topics.*Philosophica* 27:53-94.
- Reinhart, T. 1995. Interface Strategies. OTS Working Papers. Utrecht.
- Rochemont, M. 1986. *Focus in generative grammar*. Amsterdam:John Benjamins.
- Rooth, M. 1985. *Association with focus*. Ph.D. Dissertation. University of Massachusetts, Amherst.
- Ross, J. R. 1967. *Constraints on variables in syntax*. Cambridge, MA:MIT dissertation.
- Schmerling, S. F. 1976. *Aspects of English sentence stress*. Austin:University of Texas Press.
- Selkirk, E. O. 1984. *Phonology and syntax:the relation between sound and structure*. Cambridge, Mass.:MIT Press.
- Sgall, P., E. Hajičová and Benešová 1973. *Topic, focus, and generative semantics*. Kronberg: Scriptor Verlag GmbH.
- Sgall, Petr, E. Hajičová and J. Panevová. 1986. *The meaning of the sentence in its semantic and pragmatic aspects*. Dordrecht: Reidel.
- Strawson, P. F. 1950. On referring. *Mind* 61:320-344.
- Strawson, P.F. 1964. Identifying reference and truth values. *Theoria* 3.96-118.
- Sperber, D. and D. Wilson. 1986/1995. *Relevance: communication and cognition*. Blackwell. 2nd edition.
- Tomlin, R. S. 1995. The cognitive bases of functional interaction. Paper presented at the Colloquium on Discourse: Linguistic, Philosophical and Computational Perspectives, University of Pittsburgh.
- Vallduví, E. 1992. *The Informational component*. New York:Garland.
- Vallduví, E. and M. Vilkuna. On rheme and kontrast. In Cullicover and McNally (eds.), 79-108.
- Vallduví, E.and R. Zacharski. 1994. Accenting phenomena, association with focus, and the recursiveness of focus-ground. In P. Dekker and M. Stokhof (eds.), *Proceedings of the Ninth Amsterdam Colloquium*. Amsterdam:ILLC, 683-702
- Walker, M. A., A. K. Joshi and E. F. Prince (eds.). 1998. *Centering theory in discourse*. Oxford University Press.
- Ward, G. 1988. *The semantics and pragmatics of preposing*. New York:Garland.
- Zacharski, R. 1993. *A discourse pragmatics model of English Accent*. Ph.D. dissertation, University of Minnesota, Minneapolis.
- Ziv, Y. and B. Grosz. 1994. Right dislocation and attentional state. *Proceedings of the 9th annual conference and of the workshop on discourse*. The Israeli Association for Theoretical Linguistics, 184-199.