Topic, Focus, and the Grammar-Pragmatics Interface*

Jeanette K. Gundel

1 The Problem

In the introduction to her classic paper on topic, Reinhart (1982) writes: "Although the subject matter of pragmatic theory is ostensibly linguistic communication, much of it deals, in fact, with the more general problem of human interaction, which is independent of linguistic considerations and of which linguistic communication is just a particular manifestation. Thus, as Grice points out, his principle of cooperation holds equally for rational conversation and for baking a cake. Sentence topics, by contrast, are a pragmatic phenomenon which is specifically linguistic."

I agree with Reinhart that sentence topic is a specifically linguistic phenomenon. But I will propose in this paper that it is not primarily a pragmatic or discourse phenomenon as Reinhart and others have assumed. It is an integral part of the semantic/conceptual representation of natural language sentences, which is encoded (though not always unambiguously) by their morpho-syntactic and/or phonological form. The fact that topic-comment structure contributes to the way sentences are processed and interpreted in context, and thus constrains the appropriate contexts for a given sentence, doesn't necessarily distinguish this notion from other aspects of the meaning of sentences. The important question then isn't whether some particular linguistic phenomenon has pragmatic effects or not, but which of its properties are determined by the grammar and which can be derived from more general cognitive and communicative principles. Much of what I will have to say in this paper isn't new, but I hope that reformulating the question in this way will shed new light on some old controversies, if not resolve them.

2 Some History

---

* This paper is an expanded version of an essay submitted to the Chomsky birthday celebration website (http://mitpress.mit.edu/celebration.) I would like to thank Antoin Auchlin and Ellen Prince for helpful comments on earlier versions.

Chomsky (1965 : 163) notes "the extensive discussion (in traditional grammar as well as psychology) of the distinction between the 'grammatical' Subject and Predicate of a sentence and its 'logical' or 'psychological' Subject and Predicate." Chomsky cites one such example from Cook Wilson, who writes (1926, pp. 119f.) "...in the statement 'glass is elastic,' if the matter of inquiry was elasticity and the question was what substances possessed the property of elasticity, 'glass' ...would no longer be subject, and the kind of stress which fell upon 'elastic' when glass was the subject would now be transferred to 'glass.' Thus in the statement '*glass* is elastic,' 'glass,' which has the stress, is the only word which refers to the supposed new fact in the nature of elasticity, that it is found in glass...[and therefore]...'glass' would have to be the predicate...Thus the same form of words should be analyzed differently according as the words are the answer to one question or another, and, in general, the subject and predicate are not necessarily *words* in the sentence, nor even something denoted by words in the sentence."

Chomsky concludes that "whatever the force of such observations may be, it seems that they lie beyond the scope of any existing theory of language structure or language use."

A few years later, Chomsky (1971), (and around the same time Jackendoff 1972) opens the way towards bringing such issues within the scope of generative grammar. Chomsky notes that a sentence like (3) (intonation center marked by uppercase letters) has three possible interpretations, each expressing a different presupposition, depending on which constituent containing the intonation center is interpreted as the 'focus'. Sentence (4), on the other hand, has only one possible interpretation, and this is different from any of the interpretations available for (3). Each possible focus interpretation determines a different type of answer. Correspondingly, if (3) and (4) were declarative sentences, they would be responsive to different *wh*-questions (implicit or explicit) .

(3) Did the Red Sox play the YANKEES? (Chomsky 1971)

PRESUPPOSITION	FOCUS	POSSIBLE RESPONSE
the RS played someone	the Yankees	No. The Tigers.
the RS did something	played the Yankees	No. They had the day off.

something happened	the RS played the Yankees	No. Bill had the flu.[1]

(4) Did the RED SOX play the Yankees?

PRESUPPOSITION	FOCUS	POSSIBLE RESPONSE
Someone played the Yankees	the Red Sox	No. (it was) the Tigers

The presupposition-focus interpretations of (3) and (4) can be reformulated as different topic-comment interpretations, as in (3') and (4') respectively. [2] Thus, on the interpretation where only the phrase *the Yankees* is in focus, the topic is who the Red Sox played (alternatively, the ones who the Red Sox played) and the comment is that this was the Yankees. On the reading where focus is the whole VP/IP constituent *play the Yankees*, the topic is the Red Sox, or what the Red Sox did, and the comment is that they played the Yankees. And on the reading where the whole sentence is focus, the topic is something not overtly represented in the sentence at all, possibly what happened at a particular time and place (cf. Gundel 1974/89), Erteschik-Shir 1997) and the comment is that the Red Sox played the Yankees. Note that the comment is the main predication, and thus the scope of what is being questioned in each case.

(3') Did the Red Sox play the YANKEES?

TOPIC/THEME	COMMENT/RHEME
(the ones) Who the Red Sox played	(x is) the Yankees
The Red Sox/ what the RS did	(x is) played the Yankees
??/ time x, place y	the Red Sox played the Yankees

In (4), on the other hand, we get only a single interpretation, where the topic is (the one) who played the Yankees, and the comment is that this is the Red Sox.

(4') Did the RED SOX play the Yankees?

---

[1] For example, as an answer to "Why didn't you come to the party? Did the Red Sox play the Yankees?"

[2] In Gundel 1974/89, I argued that the presupposition-focus distinction can be reduced to the topic-comment distinction. The two concepts have generally been treated as independent in most of the generative literature, however.

TOPIC/THEME	COMMENT/RHEME
(the ones) who played the Yankees	(x is) the Red Sox

Extensive research on topic-comment, presupposition-focus, and related concepts in the past three decades has clearly established their relevance for theories of language structure and use. But terminological confusion abounds, and there is still no agreement on what the conceptual primitives are and how they are related. Moreover, while it is customary to use labels like 'pragmatics' and 'discourse' in characterizing these concepts, relatively little attention has been devoted to actually distinguishing their grammatical properties from properties attributable to more general pragmatic principles.

3 Two Kinds of Givenness/Newness

Much of the confusion surrounding these issues has resulted from conflating two types of givenness/newness (see Gundel 1988, 1994)[3]. One type is referential; it involves a relation between a linguistic expression and a corresponding non-linguistic entity in the speaker/hearer's mind, the discourse, 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/newness 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 (1987) 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).

The second type of givenness/newness is relational. It involves two complementary parts, X and Y, of a linguistic or conceptual representation, where X is given in relation to Y, and Y is new in relation to X. Included here is the notion of logical/psychological subject and predicate described in the Cook Wilson quote above, as well as such well known information-structural pairs as presupposition-focus (e.g. Chomsky 1971, Jackendoff 1972), topic-comment (e.g. Gundel 1974/89), theme-rheme (e.g. Vallduvi 1992), and topic-predicate (Erteschik-Shir 1997).

---

[3] Lambrecht 1994 is a notable exception here.

Referential givenness/newness and relational givenness/newness are logically independent, as seen in the following example from Gundel 1980.

(5) A. Who called? B. Pat said SHE called.

If *SHE* 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 high pitched accent here. It instantiates the variable in the relationally given, topical part of the sentence, x called, thus yielding the new information expressed in (5B).

The two kinds of givenness/newneess also differ in other important respects. First, with the exception of Prince's notion of discourse-old/new, referential givenness/newness notions are not specific to linguistic expressions. Thus, one can just as easily characterize the representation evoked by a non-linguistic visual or auditory stimulus , e.g., a house or a tune, as familiar or not, in focus or not, and even specific or not. By contrast, concepts like topic-comment, presupposition-focus, psychological/logical subject and predicate 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 like 'familiar' or 'in focus' are uniquely determined by the context at a given point in the discourse. The speaker chooses what she wants to refer to, or whether she wants to refer at all; but once this choice is made, the particular givenness status for the addressee is already predetermined by the context of utterance. Relational givenness notions like topic-comment , on the other hand, may be constrained by the context (as all aspects of meaning are in some sense); but, as the Czech linguist Peter Sgall pointed out a number of years ago, they are not uniquely determined by it. For example, a sentence like *There was a baseball game last night* could be followed by *The Yankees beat the RED SOX* or by *The Red Sox were beaten by the YANKEES.* While the latter two sentences could each have an interpretation where the whole sentence is a comment on the situation established by the preceding utterance, it is also possible in exactly the same context to interpret the first of these sentences as a comment about the Yankees and the second as a comment about the Red Sox. Which of these possible interpretations is the intended one depends on the interests and perspective of the speaker.

One place where the context determines a single topic-comment or presupposition-focus structure is in question-answer pairs , which is why these provide the most reliable contextual tests for relational/newness concepts, as in (3)-(4) and (3')-(4') above. Thus, (6b) would be an appropriate answer to the question in (6a), but (6c) would not be.

(6) 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.

It is important to note, however, that questions constrain other properties of the answer as well. Thus, (6d) is no more appropriate as an answer to (6a) than (6c) would be. The exact source of the inappropriateness may be different, but the point is that questions severely constrain **all** aspects of the semantic-conceptual content of an appropriate answer. The fact that appropriateness of a sentence as a response to a given question varies depending on location of the intonation center simply shows that sentence intonation codes a semantic-conceptual distinction. It does not necessarily make the distinction coded by intonational focus any more 'pragmatic' or 'discourse-dependent' than other aspects of the interpretation of natural language sentences.

The question that naturally arises for both types of givenness/newness, is how many different concepts are linguistically relevant in each category, and how are they relevant? This question has been addressed for referential givenness in Gundel, Hedberg and Zacharski 1993, and I will not be concerned with it further here. My main concern in the present paper is with relational givenness. The difference between 'topic-comment' and 'theme-rheme appears to be mainly terminological, 'theme-rheme' being favored in the European linguistics tradition, and 'topic-comment' in the American. While specific accounts differ as to whether these are to be defined on syntactic, semantic, or separate information structural levels of representation, both concepts essentially capture the logical/psychological subject-predicate distinction referred to in the Chomsky quote in §2. If the focus-presupposition distinction is reformulated as the topic-comment distinction, in the manner suggested in (3') and (4') above,.[4].we are left with

[4] I have in mind here only the notion of focus as a complement to presupposition, not focus as contrast (e.g. Rooth 1985) or as 'what the speaker wants to call the

a single linguistically relevant relational givenness-newness concept. Reformulating the presupposition-focus distinction in this way makes it possible to capture the two complementary parts on the same level of description. Focus and presupposition, as these have generally been conceived in the literature, are not constructs of the same kind. Focus, though it has a semantic/pragmatic value, is defined on syntactic structures, while presupposition is a purely interpretive notion. So while the focus-presupposition distinction is intuitively clear, and may work well for descriptive purposes, an adequate theoretical account would need to invoke a more appropriate complementary pair in any case.

4 Referential Properties of Topic

While referential and relational givenness/newness are separate and logically independent notions, there is evidence that they are connected empirically, the relationally given component of a proposition, the topic, being in some sense referentially given as well. This fact has no doubt contributed to the terminological and conceptual confusion. 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. by 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 (7), where the subject phrase is marked by the nominative marker *ga*, both the subject and the object can have either a definite or indefinite interpretation. But in (8) , where the subject is followed by the topic marker *wa*, it can only be interpreted as definite.

(7) Neko ga kingyo o ijit-te ......
cat NOM goldfish OBJ play with-and
"The/A cat is playing with the/a goldfish, and..."
(8) Neko wa kingyo o ijit-te
cat TOP goldfish OBJ play with-and

---

addressee's attention to (Erteschik-Shir 1997). See Gundel 1998 for discussion of different senses of the term 'focus'.

"The/*A cat is playing with the/a goldfish, and..."

Similarly, in prototypical topic-comment constructions like those in (9)-(13), the topic phrase adjoined to the left of the clause is definite.

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

Dislocation of indefinites is generally disallowed unless it can have a generic interpretation, as illustrated in (13) (from Gundel 1988).

(13) a. The window, it's still open.
b. *A window, it's still open.

Note that the unacceptability of (13b) cannot be attributed to the fact that the definite pronoun has an indefinite antecedent, as the discourse in (14) is perfectly acceptable.

(14) We can't leave yet. A window is still open. It's the one in your bedroom

In Gundel (1985) I proposed a condition on topics which states that their referents must be already familiar to the addressee. This restriction was intended as a necessary condition, not a sufficient condition or definitional property. Formulated in terms of the cognitive status proposed in Gundel, Hedberg and Zacharski 1993, an entity is familiar if the addressee can be assumed to have an existing representation of the referent in memory Assuming that indefinites don't generally code familiar entities (unless they are interpreted generically) , the familiarity condition on topics provides a principled explanation for facts like those in (6)-(13) without restricting topics to discourse-old or salient entities.[5] It also captures, in more overtly

[5]. As Gundel, Hedberg and Zacharski point out, it is irrelevant how the status is acquired, i.e. whether through previous mention in the discourse, general world knowledge, presence in the extralinguistic context, etc. The referents of generics would thus always be familiar, or at least uniquely identifiable, since the addressee could be assumed to have a representation of the

cognitive terms, Strawson's insight that only topical definites carry an existential presupposition.

The examples in (7)-(13) provide support for the 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 argues that Japanese *wa* is not a topic marker, but a 'new information' marker. Tomlin's arguments are based primarily on experimental evidence and the observation that *wa* is typically used to mark noun phrases referring to entities that are 'new' in the sense that they are not currently salient in the discourse. This is at best a tendency, however. It is not an absolute restriction. More importantly, Tomlin's argument rests on a confusion between referential and relational givenness and, specifically , on the assumption that topics are necessarily 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 (9)-(13) 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 essentially equate this notion with focus of attention and do not follow from the generally accepted relational definition of topic as what the sentence is about [6] Their notion of topic is thus somewhat more narrow than that assumed by most researchers. It is closer to 'continued topic' or the backward center of Centering Theory. The fact that *wa*-marked and dislocated phrases often do not refer to recently mentioned or otherwise salient entities thus cannot be taken as empirical evidence against the claim that such phrases mark topics.

---

class/kind. The fact that the indefinite article typically doesn't encode familiar entities is attributed to a Quantity implicature; it is not encoded as part of the meaning of 'indefinite' determiners, as in Heim (1982) inter alia.

[6] 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 mentioned or otherwise salient entities.

More serious empirical challenges to the assumption that so-called topicalized and dislocated phrases refer to topics come from Ellen Prince and other researchers who base their analyses on corpus studies of these constructions. Citing examples from naturally occurring discourse, Prince (1997) argues that the constructions in question do not have a topic marking function. Rather, they have a variety of different functions including contrast and avoidance of discourse-new subjects.

Prince's proposals about the discourse functions of left dislocated and topicalized sentences provide important insights into the reasons why people might use these constructions in particular discourse contexts. Her ideas also make it possible to capture the fact that the same syntactic construction may have different functions in different languages. But I don't think the specific functions she proposes are necessarily inconsistent with the claim that these topicalization and dislocation partitions a sentence into two syntactic constituents, one of which is interpreted as topic and the other as comment. On the contrary, this assumption may help provide an explanation for some of the specific discourse functions she posits.

Examples like (15) and (16) (both from Prince 1997) do, however, appear to pose a challenge to the claim that dislocated phrases refer to topics, as the dislocated phrases *most middle class Americans* and *any company* are not even referential

(15) Most middle-class Americans, when they look at the costs plus the benefits, they're going to be much better off.

(16) Any company, if they're worth 150 million dollars, you don't need to think of ....

.If topic is what the sentence or proposition is about, a definition assumed by virtually all researchers, then referentiality would have to be a minimal semantic restriction on topics. There would have to be an individuated entity in order for truth value to be assessed in relation to that entity. Notice, however, that the dislocated phrases in (15) and (16) are both strong NPs in the sense of Milsark 1977, and both 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. In Gundel 1974/89, I proposed that the topic in dislocated phrases of this type is the entity which is quantified (i.e. the N-set), not the whole quantified phrase. Thus, (15) and (16) could be paraphrased as (15') and (16') respectively.

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

(16’) (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 (15) and (16) is part of the syntactic topic phrase, but it is not part of the semantic or pragmatic topic. If the topic of (15) is the generic ‘middle class Americans’ and the topic of (16) is the generic ‘companies’, the topic of these sentences is not only referential, in the sense that it maps onto some individuated entity; it is also familiar in the sense defined above.

Prince also cites examples like (17), however, where the dislocated phrase is a specific indefinite, which is referential, but its referent cannot be assumed to be already familiar to the addressee.

(17) An old preacher down there, they augured under the grave where his wife was buried.

If we assume that the dislocated phrase refers to the topic, then sentences like (17) are clear counterexamples to the familiarity condition on topics proposed in Gundel (1985) and elsewhere. If (17) is about anything, then it must be about the individual referred to as *an old preacher down there*. But the referent of this phrase is not assumed to be familiar to the addressee. If the speaker could assume the addressee already has a representation of the preacher in memory, he would have used a definite phrase instead. Reinhart 1982, Davison 1984 and others have in fact proposed that referential (specific) indefinites can be topics, and that familiarity is therefore not a necessary condition on topics. Reinhart 1995 uses this assumption to explain why a sentence like (18a) is judged as false by some speakers and as neither true nor false by others, while (18b) is easily judged as simply false by all speakers.

(18) a. Two American kings lived in New York.
b. There were two American kings who lived in New York.

Reinhart’s argument, based on Strawson’s insight that only topics carry existential presuppositions (because they are the locus of truth value assessment), is that *two American kings* in (18a) may or may not be interpreted as topic, depending on the context of utterance. The same phrase in (18b) can never be a topic, however, since topics are excluded from post-copular position in existential sentences.

As noted above, quantified indefinites have a partitive interpretation, available when the quantifier is stressed, where the topic is not the whole indefinite phrase, but only the N-set (*American kings* in this case) which is quantified. It is only under this interpretation, I would argue, that the subject phrase in (18a) could be interpreted as referring to the topic. And this is also the interpretation which yields the truth value gap interpretation. Examples like those in (18) can thus be accounted for in a manner similar to that proposed by Reinhart, without assuming that specific indefinites can serve as topics, and thereby giving up the familiarity condition. No such analysis is available for (17), however; such sentences thus remain a serious counterexample to the claim that topics must be familiar.

Weakening the condition to referentiality allows specific indefinite topics like the dislocated phrase in (17), but it also allows other referential indefinites to be topics, and thus fails to account for the definiteness effect of topics illustrated in examples like (8) and (13). Moreover, it fails to capture the insights that originally motivated Strawson's position that only topical definites carry an existential presupposition. I don't believe that extending the presupposition condition to indefinites is in the spirit of Strawson's ideas here. While the notion of existential presupposition can be construed as purely semantic, i.e. independent of speakers, hearers and other aspects of the context of utterance, Strawson in fact characterized it specifically in terms of identifiability by the hearer, i.e. as a pragmatic notion similar to familiarity. And this status is clearly not associated with specific indefinites like the dislocated phrase in (17).

5 Towards a Resolution. The Grammar-Pragmatics Interface.

In the remainder of this section, I will sketch an account of the topic-comment distinction which attempts to reconcile the two different positions concerning referential properties of topics within a relevance theoretic view of language understanding (Sperber and Wilson 1986/95). The basic premise of Relevance Theory (RT) is that human cognitive processes, including language understanding, are geared towards achieving adequate contextual effects for a minimum amount of processing effort. When interpreting an utterance, the addressee must identify the assumption explicitly expressed, and must work out the consequences of adding this assumption to a set of existing assumptions in memory, by strengthening or eliminating the existing assumptions or by yielding new assumptions. Thus, the interpretation crucially involves seeing what Sperber and Wilson call the ‘contextual effects’ of this assumption in a context determined, at least in part, by earlier acts of comprehension. According to RT, then, interpretation simultaneously involves both grammar-driven and purely inferential, processes, the latter including not only Gricean-type implicatures, but also reference assignment, spatio-temporal assignment, and other Relevance-driven enrichments which are underdetermined by the grammar, but are needed to determine the full meaning of the expressed proposition.

Assuming such an account of utterance understanding, I propose the following.

1. The (decoded) semantic/conceptual representation associated with a sentence, and the expressed proposition which is an ‘enrichment’ of that representation, is a topic-comment structure, where the topic is what the sentence is about and the comment is the main predication about the topic. 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.

2. Topic-comment structure as determined by the grammar 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. Utterances with non-familiar topics typically 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 pragmatically deviant, even if they are grammatically well-formed.

The referentiality condition on topics, then, is a semantic, grammar-based, condition.. The stronger familiarity condition on topics is a pragmatic, Relevance-based distinction - one which holds at the grammar-pragmatics (conceptual-intentional) interface. In Gundel (1985) I suggested, in the absence of an explicit pragmatic theory of language understanding, that the familiarity condition on topics can be suspended ‘under certain conditions’, thus allowing for examples like (17). Relevance theory allows us to articulate more explicitly what those conditions are. Sentences like (17) are not pragmatically deviant since contextual effects can be derived without assessing the truth of the proposition in relation to the topic (alternatively, assessment could be carried out only nominally with respect to the familiar phrase ‘down there’ that the topic is anchored in.) In such cases, the proposition is simply accepted as ‘new information’ without actually checking whether it contradicts, strengthens or otherwise adds to existing assumptions. Such an account is supported by the fact that when assessment is essential, as in questions and directives, dislocation of indefinites becomes infelicitous at best, as seen in (19) and (20).

(19) a. The old preacher down there, did they auger under the grave where his father was buried?
b. ??An old preacher down there, did they auger under the grave where his father was buried?

(20) a. The old preacher down there, auger under the grave where his father was buried.
b. ??An old preacher down there, auger under the grave where his father was buried.

I conclude then that while the topic-comment (presupposition-focus) relation is clearly linguistic in nature, the familiarity condition and corresponding ‘definiteness/presupposition effects’ of topics follow from general pragmatic principles. They are not part of the grammar.

References

Chomsky, N. 1965. *Aspects of the theory of syntax*. Cambridge, Mass.:MIT Press.
Chomsky, Noam. 1971. Deep structure, surface structure and semantic interpretation. In *Semantics, an Interdisciplinary Reader in Linguistics, Philosophy and Psychology*., ed. D. Steinberg and L. Jakobovits, 183-216. Cambridge:Cambridge Univ. Press.
Davison, Alice. 1984. Syntactic markedness and the definition of sentence topic. *Language* 60, 797-846.
Enç, Mürvet. 1991. The semantics of specificity. *Linguistic Inquiry* 22.1-25.
Fodor, Janet. D., and Ivan. Sag. 1982. Referential and quantificational indefinites. *Linguistics and philosophy* 5.355-398.

Erteschik-Shir, Nomi. 1997. *The Dynamics of Focus Structure*. Cambridge: Cambridge Univ. Press.

Gundel, Jeanette .K. 1974. *The Role of Topic and Comment in Linguistic Theory*. Ph.D. Dissertation, University of Texas at Austin. Published by Garland, 1989.

Gundel, Jeanette. 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.

Gundel, Jeanette. K. 1985. Shared knowledge and topicality. *Journal of Pragmatics*, 9: 83-107.

Gundel, Jeanette. K. 1988. Universals of topic-comment structure. *In Studies in syntactic typology*, ed. In M. Hammond, E. Moravczik and J. Wirth. Amsterdam:John Benjamins, 209-239..

Gundel, Jeanette. K., Nancy Hedberg and Ron Zacharski. 1993. Cognitive status and the form of referring expressions in discourse. *Language* 69:274-307.

Gundel, Jeanette K. 1998. On different kinds of focus. *In Focus in natural language processing*, ed. P. Bosch and R. van der Sandt. Cambridge: Cambridge Univ. Press, 293-305.

Heim, Irene R. 1982. *The semantics of definite and indefinite noun phrases*. Amherst: University of Massachusetts dissertation.

Jackendoff, Ray. 1972. *Semantic interpretation in generative grammar*. Cambridge: MIT Press.

Kuno, Susumu. 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.

Lambrecht, Knud. 1994. *Information structure and sentence form*: *topic, focus and the mental representation of discourse referents*. Cambridge:Cambridge University Press.

Milsark, Gary. 1977. Toward an explanation of certain peculiarities of the existential construction in English. *Linguistic Analysis* 3, 1-30.

Prince. Ellen 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.

Reinhart, Tanya. 1982. Pragmatics and linguistics. An analysis of sentence topics. *Philosophica* 27:53-94.

Reinhart, Tanya. 1995. Interface Strategies. OTS Working Papers. Utrecht.

Strawson, P.F. 1964. Identifying reference and truth values. *Theoria* 3.96-118.

Sperber, Dan and Deirdre Wilson. 1986/1995. *Relevance: communication and cognition.* Oxford, Blackwell.

Tomlin, Russel S. The cognitive bases of functional interaction. Paper presented at the Colloquium on Discourse: Linguistic, Philosophical and Computational Perspectives, University of Pittsburgh, March 26, 1995.

Vallduvi, Enric, 1992. *The Informational component.* New York:Garland.
Wilson, C..J. 1926. *Statement and inference*. Oxford. Clarendon Press.