

The Semantics and Pragmatics
of the Contrastive Topic in Hungarian

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**The Semantics and Pragmatics
of the Contrastive Topic
in Hungarian**

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To my parents

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I. What is a Contrastive Topic?

1 Introduction

This work has two major aims. On the one hand, it intends to describe the characteristic semantic properties of the constituents playing the role of the *contrastive topic* in the Hungarian sentence, the presuppositions and implicatures introduced by these constituents, and the essential properties of the discourses they can appear in. On the other hand, it aims to explain how the truth-conditional meanings of sentences containing such constituents can be accounted for, with special emphasis on how the scope of quantificational expressions as contrastive topics is to be derived, and on how the availability of distributive versus collective readings for plural noun phrases playing the latter role is to be explained. The sentence-initial constituents of the following sentences represent prototypical instances of what is normally referred to as the contrastive topic in Hungarian contemporary linguistics. In these examples, as in all examples to be presented in this book, a forward slash, ‘/’, marks the presence of an obligatory rising pitch accent, whereas a backslash, ‘\’, marks the presence of an obligatory falling one on the syllable marked with capitals. (Further discussion of the prosody of sentences containing contrastive topics will follow below.)

- (1) a. /JÁnos \PÉCSre utazott.
John Pécs.onto travelled
‘As for John, he went to Pécs.’
- b. /MINdenki \NEM bukott meg a vizsgán.
everybody not failed VM¹ the exam.on
‘It is not the case that everybody failed the exam.’

There seems to be a general consensus in the literature (cf. Alberti and Medve 2000, É. Kiss 1998a, 2002, Gécseg 2001, Kenesei 1989, Molnár 1998, Szabolcsi 1980, 1981a, among others) that contrastive topics are constituents that are situated on the left periphery of the Hungarian sentence (that is, preceding the part dominated by the DistP, FP, NegP, AspP or VP projections in É. Kiss’s 2002 framework). An outstanding semantic/pragmatic property of these constituents, which their name is probably based on, is that they convey that their denotation is contrasted to some other denotation of the same type, pointed out first by Szabolcsi (1980, 1981a).

The name contrastive topic also appears to indicate that the constituents under investigation should be viewed as a subtype of topics. This assumption, if valid, could contribute in a significant way to the characterization of the

1 Following É. Kiss (2002), ‘VM’ stands for the class of verbal modifiers, which includes, among others, verbal prefixes and bare noun arguments.

semantics/pragmatics of the contrastive topic. Section 2 discusses the question of what the concept of topicality actually consists in, reviewing some of the most important notions of information structuring first, and then turning to topic definitions found in the literature. Section 3 investigates the relation between the approaches to topicality outlined before and the syntactic approach to topics in Hungarian proposed in É. Kiss (1987, 1992, 2002). Section 4 enumerates the prosodic, syntactic, semantic and pragmatic properties of Hungarian contrastive topics in general. Section 5 concentrates on the prosody of contrastive topic DPs, and Section 6 summarizes the results of the chapter.

2 Topic as a concept of information structuring

2.1 Traditional concepts of information structuring²

According to an observation that has been around in the linguistic literature since at least the middle of the 19th century, there are several constructions available for expressing the same proposition in each language, although these constructions are typically not interchangeable with each other in all contexts. Different syntactic encodings of the same proposition can differ, among other facts, as to what aspects of the information encoded by the sentence are presented as *given* (i.e. reconstructable by the listener from the the previous text) and which as *new*, and, on the other hand, as to which parts of the sentence name the entity or thing the sentence is taken to make a predication about. Chafe (1976) uses the notion ‘information packaging’ to refer to the phenomenon of arranging the message by the speaker in a way that takes the above parameters into consideration, that is, to “accommodat[ing] his speech to temporary states of the addressee’s mind, rather than to the long-term knowledge of the addressee” (p. 28). In the rest of the section, we point out some of the major milestones in the research into the information structuring of sentences, and review the definitions of the basic notions that have been used in this research tradition, including the oppositions *theme–rheme*, *topic–comment*, *topic–focus*, *focus–background*. Particular attention will be devoted to the history of the concept *topic*.

Georg von der Gabelentz (e.g. Gabelentz 1869) is the author most often credited with first differentiating between constituents of the sentence that serve the aim of directing the hearer’s attention to something, about which the speaker wants the hearer to think of, and the rest of the sentence.³ He refers to constituents having the latter properties as *psychological subjects* and *psychological predicates*, respectively.⁴ The next significant step in information structure research was made

² Due to limitations of space, the present review concentrates only on the concepts and theories which will be made use of in the following discussion. For a much more detailed overview of the literature on information structuring, the reader is referred to Gundel (1985), Krifka (2008), McNally (1998), Molnár (1998), de Swart and de Hoop (1995), and Vallduví (1990), which the present review is primarily based on.

³ Sámuel Brassai’s work, published from the 1850s onwards, actually preceded that by von der Gabelentz, but it remained largely unnoticed among his international contemporaries. Brassai’s contributions to information structure reseach are reviewed in section 3.1.

⁴ For a more detailed characterization of these concepts see Schlobinski and Schütze-Coburn (1992) and Krifka (2008), among others.

by Vilém Mathesius in works written from the 1920s onwards. He replaces the psycholinguistic definitions by von der Gabelentz with a distinction framed in terms of functional linguistics, between what “is being spoken about in the sentence”, referred to by the Czech terms *základ*, and *téma*, most often translated into English as *theme*, and what is said about it, referred to by him as *jádro*, often translated as *rheme* (Daneš 1974: 106).⁵ Mathesius also introduces a second distinction between “the starting point of the utterance ... that which is known or at least obvious in the given situation and from which the speaker proceeds”, referred to by him as *východisko*, and “what the speaker states about, or in regard to, the starting point of the utterance” (op. cit.). The latter distinction is often referred to as the *given-new dichotomy*. Although Mathesius himself also mentions that thematicity and rhematicity is in fact a matter of degree, the idea that different constituents carry different degrees of *communicative dynamism* was worked into a full-fledged theory by Jan Firbas (1964). According to Firbas, the *theme* is “the sentence element (or elements) carrying the lowest degree(s) of C[ommunicative] D[ynamism] within the sentence” (1964: 272), that is, the least informative part of the sentence, while the *rheme* is the most informative part, the one that “pushes the communication forward” to the greatest extent (Firbas 1964: 270). The distinction was taken over by contemporary Prague linguists, cf. Sgall, Hajičová and Panevová (1986), who use the terms *topic* and *focus* to refer to constituents having the properties Firbas attributed to theme and rheme, respectively.

The term *topic* was first used, according to Daneš et al. (1974), by Yuen Ren Chao and by Charles Hockett (1958). Hockett defines *topic* and its complement, *comment*, in terms of aboutness: “the speaker announces a topic and then says something about it” (p. 201).

Halliday (1967) returns to the *theme–rheme* distinction, which he tries to make operationalizable by saying that theme is not only “what is being talked about, the point of departure for the clause as a message”, but it is “assigned initial position in the clause” (p. 212). Halliday argues that the element that constitutes the unmarked theme of the clause depends on the mood of the clause: for declarative clauses it is the subject, for polar interrogatives the “finite element of the verbal group” (p. 213), and for *wh*-interrogatives the *wh*-element. As Vallduví (1990) remarks, however, the approach makes counterintuitive predictions in the case of sentences that describe a state-of-affairs without predicating properties about any entity, like (2) below:

(2) It is raining.

The term *focus* was introduced by Halliday (1967) into the literature. According to him, “[w]hat is focal is ‘new’ information”, that is, presented as “not being recoverable from the preceding discourse” (p. 204), which constitutes a part of the rheme or extends over the latter. Halliday argues that the non-predictability of “new

⁵ According to Daneš et al. (1974), the terms *theme* and *rheme* were invented by the language philosopher H. Ammann.

information” does not mean that it is factually also new: “the newness may lie in the speech function, or it may be a matter of contrast with what has been said before or what might be expected” (p. 206). Krifka (2007) emphasizes, however, that the latter criteria for identifying focus are not easily operationalizable, neither are the definitions that attribute to focus the role of “highlighting” a part of the message, or of being the “most important” information. Krifka (2007: 6) proposes that the most promising way of understanding the role of focus is that it indicates the presence of alternatives that are relevant for the interpretation of linguistic expressions. (Cf. Rooth’s (1985, 1992) theory of focus.) Krifka argues that the latter definition covers not only the pragmatic uses of focus, where focus placement affects the well-formedness of discourses, but also its semantic uses, where focus placement has an effect on truth conditions.⁶

The approaches to the study of information structuring discussed above all utilize binary oppositions. Vallduví (1990) deviates from this tradition by proposing a way to represent the divisions of the sentence into *topic-comment* and *focus-background* in one trinomial hierarchical structure. In this structure, the sentence is first divided into the *focus* (the only part of the sentence that cannot be elided) and its complement, the *ground*, which “guarantees that the information carried by the sentence is entered into the [hearer’s] knowledge-store appropriately” (p. 58). The ground is further subdivided into the *link*, which is a sentence-initial expression that “directs the hearer to a given address in the hearer’s knowledge-store, under which the information carried by the sentence is entered” (p. 59), and the latter’s complement, the *tail*, which “may be viewed as an element that acts as a signalling flag to indicate how the information carried by the sentence must be entered under a given address” (p. 61). In Vallduví’s theory, the generation and interpretation of information packaging belongs to an autonomous module of the grammar called *informatics*. In this module, the hearer’s knowledge-store is represented, taking the metaphor proposed by Heim (1982, 1983) literally, as a large file consisting of file cards or addresses. The function of the link, then, is to act as an address pointer, specifying the discourse entity on whose card the information carried by the sentence should be stored, whereas the tail specifies how the information should be entered under a given address. Vallduví’s arguments for postulating a separate level of informatics are criticized by Hendriks (1998) and Portner and Yabushita (1998), who point out various problems that result from the separation of information structuring from semantic interpretation. Reinhart (1982) also presents some arguments showing that topicality can have an effect on interpretation: it interacts with existential presuppositions, and affects the interpretation of anaphors.

⁶ (i)–(ii) below are a well-known pair of examples from Rooth (1985: 29, ex. (5)) illustrating how focus can affect truth conditions when a focus-sensitive particle is associated with it (stress, which indicates focusing, is marked by capitals):

- (i) John only introduced BILL to Sue.
- (ii) John only introduced Bill to SUE.

Having introduced some of the most important concepts that have been proposed for characterizing the information structuring of sentences, we turn to a more detailed investigation of what topics are.

2.2 Defining topic

2.2.1 Aboutness topics

As the previous discussion has shown, the concept *topic* has been defined in different ways in different theoretical traditions. The most widely accepted present-day characterization of the topic–comment division follows Hockett’s definition, and claims that topics identify an entity about which the rest of the sentence, the comment, provides some information (cf. Krifka 2007). The latter general definition of topic in terms of aboutness, however, gives rise to various interpretations, which is possibly due to the fact, as pointed out by Krifka (2007), that human communication and memory are not necessarily organized in a way that reflects that information must be about something. One major point of controversy is whether a topic is uniquely associated with a sentence, or whether the same sentence (with the same intonation) can have different topics in different contexts. The latter approach is defended by Reinhart (1982), to be discussed below, whereas the former seems to be supported by data from languages where the encoding of topics seems to be grammaticalized (like Japanese or Hungarian). The second source of disagreement concerns the issue what properties an entity or an expression denoting an entity (the choice depending on the theory) has to satisfy in order to qualify as a topic in the aboutness sense.

We begin our more systematic overview of the two debated issues mentioned above with looking at the claims made by Reinhart (1982). According to this theory, a *sentence topic* is an entity that the sentence is taken to be about, and always corresponds to an expression within the sentence. Reinhart distinguishes the sentence topic from the *discourse topic*, which the whole discourse is assumed to provide some information about, but which does not have to correspond to a linguistic expression. The difference is illustrated with the help of one of her examples:

- (3) Mr. Morgan is a careful researcher and a knowledgeable Semiticist, but his originality leaves something to be desired.

(Reinhart 1982: 1)

The sentence topic of (3) above is Mr. Morgan, whereas the discourse topic associated with the sentence is Mr. Morgan’s scholarly ability.

Reinhart claims that the topic of a sentence is jointly determined by the syntactic structure and the context, which means that it can vary across different contexts or even be missing completely. She recognizes that there are certain syntactic configurations that obligatorily mark certain NPs as topics (which is related to the fact that these constructions can only appear in a limited range of contexts), like left dislocation, illustrated in (4), but she denies that the role of

intonation in determining the topic of a sentence could be described in an equally systematic way, in spite of recognizing its importance in the choice of the topic.

- (4) Felix, it's been ages since I've seen him.

(Reinhart 1982: 9)

Although Reinhart does not claim that NP referents are the only possible topics, she only provides illustrations for this case. Universally quantified NPs can only introduce topics if they are taken to denote sets, as in (5), whereas indefinites can only introduce them if they are specific, as in (6):

- (5) Parents don't understand. But all grownups, they do it to kids, whether they're your own or not.

(Reinhart 1982: 12)

- (6) Because they wanted to know more about the ocean's current, *students in the science club at Mark Twain Junior High School of Coney Island* gave ten bottles with return address cards indixed to crewmen of one of New York City's sludge barges.

(Reinhart 1982: 12)

Reinhart (1982) integrates the contribution of topics to the interpretation of sentences into a theory of communication in the following way. She follows Stalnaker (1978) in modelling communication as a constant updating of the *context set*, which represents the set of propositions that are accepted by the interlocutors to be true at a given point in the conversation.⁷ Reinhart assumes that the context set is not an unstructured organization of information but a structured entity like a subject catalogue: the information in the context set is stored under defining entries, and at least some of these entries are determined by denotations of NPs that serve as sentence topics.⁸ Thus, the topic of the sentence determines under which entry the information expressed in the sentence is to be stored.

Gundel (1985) notices, however, that the semantic/pragmatic characterization of topics by Reinhart does not explain why they should be restricted to overt expressions in the sentence. One obvious example where the latter strategy can lead to problems is the case of languages where the verb has person and number marking on it. Although it is possible to leave out pronominal arguments in these languages, the sentences themselves can still be interpreted as being about the entity that the relevant argument corresponds to. The semantic parallelism between the following Catalan sentences illustrates the problem:

⁷ More precisely, Stalnaker (1978) defines the *context set* as the set of possible worlds compatible with the information shared by the interlocutors.

⁸ Reinhart (1982) does not specify what other means there are for establishing defining entries, and whether topics different from NP-denotations can also determine some.

- (7) a. La Núria, odia el bròquil.
 the Núria hate.3SGPRES the broccoli
 ‘Núria, she hates broccoli.’
- b. Odia el bròquil.
 hate.3SGPRES the broccoli
 ‘She hates broccoli.’

(McNally 1998: 149)

In view of data of the above kind, and given that there are syntactic constructions that necessarily mark topics, Gundel considers it necessary to differentiate between topics that are identified on the basis of syntactic structure and those that are identified on the basis of pragmatic criteria (aboutness). In her view, syntactic topics thus constitute a subset of pragmatic topics, and the two are defined as follows:

- (8) *Pragmatic Topic:*
 An entity, E, is the pragmatic topic of a sentence, S, iff S is intended to increase the addressee’s knowledge about, request information about, or otherwise get the addressee to act with respect to E.

(Gundel 1985: 86)

- (9) *Syntactic Topic:*
 A constituent, C, is the syntactic topic of some sentence, S, iff C is immediately dominated by S and C is adjoined to the left or right of some sentence S’ which is also immediately dominated by S.

(Gundel 1985: 86)

Note that, given Gundel’s definitions in (8) and (9), no syntactic topic can in fact be considered a pragmatic topic, since syntactic topics are defined as constituents but pragmatic topics as entities. We will gloss over this problem in what follows, since the relevant subset relation does obtain between pragmatic topics and the *denotations* of syntactic topics. Definition (9) intends to capture the fact that topics that are syntactically encoded are situated in a left- or right-peripheral position within the sentence.⁹ We will return to the possible further implications of connecting topichood to particular surface constituents below. Before doing that, however, let us concentrate on noun phrase topics for a moment.

As mentioned in section 2.1, the two most important dimensions along which the information structure of a sentence can be characterized include the given–new (or old–new) and the topic–comment distinctions. Although the two dimensions have already been differentiated by Mathesius, an intimate relation between givenness and topics is often assumed, which is due to the fact that if the hearer is

⁹ Gundel (1985) remarks, however, that constituents in peripheral positions that bear a focus accent are exempted from being syntactic topics.

expected to store and access the information expressed by the sentence in relation to its topic, she has to be able to identify the latter on the basis of information that is already available to her. Gundel (1985) points out that the common assumption that (pragmatic) topics should be part of the information “which is in some sense already given or shared by speaker and addressee” (Gundel 1985: 87) can be captured either by saying that they have to be identifiable or by saying that they have to be familiar to the addressee:

- (10) *Topic-Identifiability Principle*
 An expression, E, can successfully refer to a (pragmatic) topic, T, iff E is of a form that allows the addressee to uniquely identify T.
 (Gundel 1985: 87)
- (11) *Topic-Familiarity Principle*
 An entity, E, can successfully serve as a topic iff both speaker and addressee have previous knowledge of or familiarity with E.
 (Gundel 1985: 87)

According to Gundel, familiarity with an entity entails the ability to uniquely identify it, but not the other way round. One example for a uniquely identifiable but non-familiar entity is the referent of *the dog* in the sentence below:

- (12) I didn't get much sleep last night because the dog next door kept me awake.
 (Gundel 1985: 87)

Gundel finds it reasonable to assume that an utterance will only be felicitous if the addressee can uniquely identify its topic (either from the linguistic or extralinguistic context or on the basis of some expression within the sentence), given that the speaker intends to communicate something about the topic, and that the sentence will have to be stored and accessed in relation to its topic. (This assumption receives justification on the basis of the fact that syntactic topics tend to be definite or generic.) Some researchers, including Reinhart (1982), have pointed out, however, that there are sentences where the topic is an entity referred to by a specific indefinite that is not assumed to be uniquely identifiable by the listener, as in the following examples:

- (13) A daughter of a friend of mine, she got her BA in two years.
 (Gundel 1985: 89)
- (14) An old preacher down there, they augered under the grave where his wife was burried.
 (Prince 1985: 74)

Gundel (1985) reacts to the latter claim by showing that referential indefinites¹⁰ can serve as pragmatic topics only under special conditions. For example, sentences where such indefinites occupy the left- or right-peripheral positions reserved for syntactic topics are not always well-formed, as (15)–(16) indicate:

(15) * A certain printer, Mary bought it.
(Gundel 1985: 90)

(16) * Mary bought it, a certain printer.
(Gundel 1985: 90)

Gundel suggests therefore that the topic-familiarity principle as a pragmatic principle should be considered suspendable in special uses of language, or to evoke special effects. The proposal is supported by the following facts. First, left-dislocation of expressions that refer to non-familiar entities, as in (13)–(14), is more acceptable than their right-dislocation, as illustrated in (17), for example:

(17) * She got her BA in two years, a daughter of a friend of mine.
(Gundel 1986: 91)

Second, dislocated topics having non-familiar referents are restricted to assertions, compare:

(18) a. That guy in your school, call him up.
(Gundel 1986: 91)

b. *A guy in your school, call him up.
(Gundel 1986: 91)

Third, even if the referent of the topic expression is not uniquely identifiable, it must be “grounded in some entity that is identifiable or familiar” according to Gundel (1985: 91). This condition is satisfied, for example, when an explicit or implicit modifier of the topic NP has definite or generic reference, like *mine* in (13), or *down there in* (14). Gundel argues that the cases where the topic familiarity principle is suspended are special uses of language: left dislocation only happens in casual speech, whereas constructions like (14) primarily appear in news or in fiction. Whenever the topic-familiarity is suspended, the listener is expected to behave temporarily as if she was able to identify the referent of the topic. This procedure is expected to occur less frequently in questions or commands.¹¹

¹⁰ The term *referential indefinite* can be understood both in the semantic or pragmatic sense, according to Gundel (1985). The former means that the existence of the referent of the NP is entailed, and the latter that the speaker has used the expression to refer.

¹¹ Jacobs (2001) provides a completely different approach to determining the topic-comment distinction within a sentence. He claims that there is no single functional feature common to all topic-comment structures, instead, all such structures share at least one of four properties characteristic of the prototypical ones. The four properties include, among others, *predication*, which means that the topic “specifies a

The distinction between *topic* and *comment* is often brought into close connection with the linguistic realizations of the two judgment types distinguished by the philosopher Franz Brentano at the end of the 19th century, and applied to grammatical theory by his student Anton Marty (1918). The above theory¹² challenged the idea that there is one type of logical statement, consisting of a subject and predicate in the Aristotelian sense, and proposed a distinction between the so-called *categorical* and *thetic judgments*. Categorical judgments have the traditional subject-predicate structure, and are characterized as consisting of two successive acts, the act of naming an entity and the act of making a statement about it (therefore they are also referred to as *double judgments*). Thetic judgments are claimed to be logically unstructured, expressing an event, a state or a situation (therefore also referred to as *simple judgments*), or, representing “simply the recognition or rejection of material of a judgment” Kuroda (1972: 154). According to Sasse (1987), Mathesius himself was most probably familiar with the above theory, since he uses the term *thetic statement*, although he employs linguistic criteria for identifying these (impersonal verbs or impersonal copula + predicate noun constructions). However, the distinction seems to have gone unnoticed even among other scholars of the Prague school.

The revival of Brentano and Marty’s theory was due much later to Kuroda (1972), who noticed that the intuitive semantic difference between the Japanese sentences where the subject particle *ga* versus the topic particle *wa* are attached to the subject noun phrase, illustrated in (19a–b), seems to be analogous to the logical distinction between categorical and thetic judgments:

- (19) a. Inu ga hasitte iru.
 b. Inu wa hasitte iru.
 ‘A/the dog is running.’

(Kuroda 1972: 161)¹³

According to Kuroda, (19a) would be used to describe an event of running by an arbitrary dog. When using (19b), however, the speaker’s attention is directed to a certain definite dog, and she relates the event described to this particular individual. Although there is no compulsory marking of definiteness in Japanese, Kuroda argues that the noun phrases that are followed by the particle *wa* can only have a definite or generic reading. The above observations, together with the fact that there can be a maximum of one *wa*-marked noun phrase in a Japanese clause, indicate to Kuroda that the presence of *wa*-marked constituents in a sentence is a

variable in the semantic valency of an element” (p. 647) within the comment, and *addressation*, which means that the topic “marks the point in the speaker-hearer knowledge where the information carried by [the comment] has to be stored” (p. 650). This theory thus predicts that the topics specific indefinites introduce are only less prototypical, since they would possess the property of predication without that of addressation (which presupposes familiarity with the referent of the topic expression).

¹² For a more detailed characterization of the theory cf. Kuroda (1972) and Sasse (1987), which the present review is based on.

¹³ Here we have taken over Kuroda’s examples together with the translation he presents them with, although he in fact argues later that the sentence in (19b) would not actually be translated into English by using the indefinite article.

sign that the sentence encodes a categorical judgment. Sasse (1987) emphasizes that the distinction between *thetic* and *categorical* judgments has nothing to do with the *given–new* distinction (that is, whether the whole sentence corresponds to new information or not¹⁴) but reflects a distinction between two perspectives from which a state of affairs is presented. He emphasizes the difference by saying that the *thetic–categorical* distinction encodes the communicative perspective, which is a matter of the sentence, whereas the *given–new* distinction belongs to information structure, which relates to the level of the text. The essence of a categorical judgment is that it makes a predication: it ascribes a property (a *predicate*) to the *predication base*. In support of his thesis on the distinction between *thetic* vs. *categorical* and *old* vs. *new*, Sasse shows that there are syntactic constructions that encode categorical (or non-*thetic*) judgments but can still appear text-initially.¹⁵

In any case, even if the correlation between sentences with *wa*-marked phrases and categorical statements cannot be maintained on theoretical grounds, Kuroda's description of the interpretations of (19a, b) makes it clear that the *wa*-marked constituents in Japanese sentences satisfy the definition of pragmatic topics given by Reinhart (1982) and Gundel (1985), discussed above.¹⁶

Given the existence of sentence types that express *thetic* judgments across languages (several of which are illustrated by Sasse 1987), the question arises whether these are necessarily devoid of pragmatic topics as well, that is, whether these sentences can be interpreted as being *about* something, given our intuitive understanding that all sentences are about something. It has been proposed by Erteschik-Shir (1997), Jäger (2001) and Drubig (2003), among others, that, given that *thetic* sentences can only be used with reference to a specific situation, they could be viewed to be “about the contextually specified space/time at which the reported event takes place” (Drubig 2003: 11).

Most theories that view topics as being identical to (or denoting) what sentences are about only discuss cases where topics are identical to or denote individuals. However, McNally (1998) argues that treating topics as entities or as denotations of entities is by no means a necessity. According to her, the practice of doing so receives partial justification due to the fact that in languages where explicit topic-marking constructions have been identified, like Hungarian, the constituents that can appear in these constructions have been claimed to be entity-denoting (cf. É. Kiss 1992, 1998a, 2002, to be discussed below). McNally (1998: 152) shows that if the aboutness of topics is derivative of property ascription, in order to ensure that

¹⁴ See Kuno (1972) for a contrary view.

¹⁵ According to Sasse (1987), one sentence expressing a categorical statement that can appear text-initially would be the following one:

(i) A lion that looked as if it had more teeth than a crocodile came up to the two sleeping figures and licked one of them on the face. (First sentence of *How to Live with a Pampered Pet*, by Eric Gurney with text by William Nettleton, London 1967, cited in Sasse 1987: 523.)

¹⁶ Given the description of the relevant data by Kuroda, it appears to me that the range of constituents that can be followed by the *wa* particle would be coextensional not only with those that satisfy the definition of pragmatic topics by Gundel (1985), given in (8) above, and also with those that satisfy the topic-familiarity principle in (11). If the above correlation exists, it is expected that Japanese sentences with *wa*-marked noun phrases and English sentences with positions that can host only topics (i.e. left dislocation) are always intertranslatable.

topics are entities, one has to make the assumption that all properties are first order, whereas if aboutness is derivative of association of information with a “file card”, then one has to assume that all file cards correspond to entities, neither of which is formally necessary. Note, however, that if aboutness topics of all types are allowed, it becomes almost impossible to identify by formal means what the topic of a sentence should be. One possible approach is to go outside the boundaries of the sentence and rely on the coherence of discourses in determining the topic of the sentence: intuitively, in a coherent discourse, what the sentence is about should be identical to what has been asked about previously. In the next section we will look at some theories based on the above intuition.

2.2.2 Topics as questions

The tradition that places a greater emphasis on the role of topics in ensuring the informational coherence of the discourse, that is, in determining what discourses a particular sentence can appear in is referred to as the *topic-as-question* view by McNally (1998) and Portner and Yabushita (1998). This approach is based on the idea that by identifying the constituent corresponding to the topic within the current sentence it becomes possible to determine an open question of a particular form in the context that the sentence aims to resolve. The actual theories differ, of course, in how they define the conditions that have to be satisfied in order for a particular sentence topic to get licensed in a discourse.

Modelling his theory on Rooth’s (1992) analysis of focus, von Stechow (1994) argues that sentence topics introduce anaphoric elements that have to find a licenser/antecedent in the preceding discourse, and that sentence topics have to be anaphoric to discourse topics, which are defined as sets of propositions present in the discourse context. Consider the following sentence that contains a topic expression:

(20) [John]_T met Mary.

According to the theory, then, (20) would be licensed by a set of propositions in the context that is a subset of the set that comes about as a result of replacing the denotation of the topicless part of the sentence, *met Mary*, by a variable, and letting it range over alternatives to the latter’s denotation, illustrated in (21a). An incomplete list of what propositions the set in (21a) could consist of is shown in (21b):

(21) a. { $p: \exists P (p = P(\text{John}))$ }

(von Stechow 1994: 55)

b. { ‘John met Mary’, ‘John won a contest’, ‘John punched Bill’, ‘John went to sleep’, ‘John met Bill’, ... }

Assuming Hamblin’s (1973) theory of questions, according to which the semantic value of a question corresponds to the set of those propositions that constitute true

or false answers to it, the latter requirement can be satisfied by the presence of explicit or implicit questions in the context. For example, given that in a particular context, the set of propositions in (21b) is a superset of those denoted by a question like (22), (20) can get licensed according to the theory by an explicit or implicit question of this form:

(22) What about John?

Although the example seems to suggest that von Stechow's (1994) theory about the licensing of topics is on the right track, it vastly overgeneralizes, as the author himself also acknowledges. For example, the theory allows topics to be licensed by sets of propositions that contain predicates insensitive to the identity of their arguments like *self-identical*. McNally (1998) voices similar worries. She argues that von Stechow's above analysis of topics simply reiterates the claim that the contribution of each utterance should satisfy the Gricean Maxim of Relevance, that is, constitute a coherent answer to some implicit or explicit question. According to McNally, the problem with von Stechow's theory is that it does not assign any specific interpretational features to sentence topics, and only assumes that "the topic of S simply functions as a kind of "check" that S is uttered only in contexts where a set of propositions (i.e. a question) whose composition involved the denotation of a particular constituent in S has been made salient" (McNally 1998: 156).

The problems with von Stechow's approach indicate that in order to correctly capture the licensing conditions of topics in a context one has to turn to theories that are based on a more sophisticated account of the structuring of discourses. Among these approaches, Roberts (1996) is particularly relevant to the present discussion, since it aims to capture, among other facts, what presuppositions sentences containing constituents pronounced with a fall-rise accent (Bolinger's 1965 B-accent), regarded by many authors as *contrastive topics* (cf. Büring 2003) introduce with respect to the structure of the preceding discourse in English. Given, however, that she does not propose corresponding licensing conditions for ordinary topics, we postpone the discussion of the latter theory till the second chapter, which is devoted to the discourse conditions under which contrastive topics appear in various languages.

In his (1997) and (2003) publications, Daniel Büring proposes two different accounts for capturing the interpretation of English sentences containing a constituent pronounced with a fall-rise or B-accent and their German equivalents, illustrated in (23) and (24), respectively. These two proposals, which are both based on Roberts' idea that intonationally prominent constituents contribute to determining the structure of discourses they appear in, will also be reviewed in Chapter 2.

(23) A: Did your wife kiss other men?
B: /MY wife DIDN'T\ kiss other men.

(Büring 1997: 56, notation slightly changed)

(24) A: What did you buy on 59th Street?

B: Auf der /NEUNundfünfzigsten Strasse habe ich die SCHUHE\
 on the 59th street have I the shoes
 gekauft.
 bought
 ‘On 59th Street I bought the shoes.’

(Büring 1997: 53)

Note that Büring (1997), which claims that the sentence-initial constituents in the above sentences are instances of *topics*,¹⁷ follows a well-established tradition in the literature, where constituents pronounced with the fall-rise accent are often regarded as *prima facie* examples of topics. Examples for this treatment include Li and Thompson (1976), which, as pointed out in É. Kiss (1981b), considers only marked structures among instantiations of topic–comment structures in subject prominent languages, like left dislocation (e.g. *As for John, I hate him*), or structures generated with the ‘topicalization’ transformation (e.g. *John, I hate*).

Having outlined two dominant contemporary approaches to how the concept *topic* should be understood in general, we turn to the problems of identifying topics in Hungarian, and to the interpretation of the constituents occupying the so-called *topic position*.

3 Syntactic topics in Hungarian

The fact that constituents fulfilling particular roles in the information structuring of sentences are marked by syntactic means in Hungarian has been the topic of intensive discussion in the literature since the 1980s (starting with works by Katalin É. Kiss, László Hunyadi, László Kálmán, István Kenesei, András Komlósy, Anna Szabolcsi, László Varga, among others). The latter property of Hungarian is partly due to the fact that subject and object arguments are identified by means of case-marking suffixes in this language, thus the syntactic encoding of information structural notions can take priority, which is described by É. Kiss (1995) by saying (borrowing the term proposed by Li and Thompson 1976) that Hungarian is a *discourse-configurational* language. In this section we summarize the most important syntactic and semantic features of constituents occupying the so-called *topic position* in Hungarian (cf. É. Kiss 1987, 1992, 2002), and examine whether all and only the constituents occupying this position should be considered topics from a pragmatic point of view or not. Before turning to these issues, however, we outline the claims made by the first theory on information structuring from a cross-linguistic perspective, proposed by Sámuel Brassai in various works in the second half of the 19th century, which the idea of there being a special position for elements with topic-like properties in Hungarian also goes back to.

¹⁷ Büring (1997, 2003) does not discuss the properties of ordinary topics pronounced with a falling tone.

3.1 The first theory of information structuring: Brassai

The person credited with proposing the first theory of the information structuring of sentences from a cross-linguistic perspective is Sámuel Brassai (cf. É. Kiss 1981b and 2008 for more detailed discussion¹⁸). In his works, published from the 1850s onwards (cf. Brassai 1860, 1863–65, among others), he claims that languages have a common structure independently of whether their word orders are fixed or free. In this structure, one or more sentence-initial constituents, which refer to things already known, and whose function is to constitute a base for the incoming information, called *inchoativum*, are followed by a second structural unit, called the *zöm* ‘bulk’, which informs about an occurrence or a circumstance of an occurrence that is not known to the hearer. This latter part can also include constituents that carry information known to the hearer but are not considered necessary to prepose. Each sentence has to have a bulk, but the *inchoativum* can also be missing, for example, when the speaker does not consider it necessary to prepare the reader for the incoming information, the preparatory information is explicitly or implicitly included in the previous text, or when the speaker is in a haste. According to Brassai, languages differ as to what constituents can appear in the *inchoativum*. In Romance languages, only arguments in the nominative case can appear there, while in Hungarian, for example, even several different arguments can also appear there at the same time. Brassai argues that in different languages the dividing line between *inchoativum* and bulk part manifests itself in different forms: the distinction is signalled with the help of word order in German and French, while Hungarian marks it with the heavy stress at the front of the bulk.

Unfortunately, Brassai’s ideas remained unfamiliar to most of his contemporaries, and thus the subsequent international research into the informational structuring of sentences did not recognize him as an important contributor. The theory was rediscovered by Katalin É. Kiss, for whom it served as a great source of inspiration in the course of working out her syntactic model of Hungarian. In what follows, we review the most important claims of É. Kiss’s current theory (cf. É. Kiss 2002) concerning the syntactic properties of the Hungarian topic position and its interpretation.

3.2 The syntactic topic position

In contemporary Hungarian generative syntax, the term *topic* is primarily used, following É. Kiss (1981a, 1987, 1992, 1994, 1995, 1998a, 2000, 2002, etc.), to refer to constituents in a particular left-peripheral syntactic position of the sentence called [Spec, TopP] in É. Kiss (2002), which are assumed to share some semantic characteristics. É. Kiss offers two types of criteria for identifying the constituents occupying the position mentioned above. The first one is based on prosodic facts and the second one on the position of sentence adverbials. As far as prosody is concerned, É. Kiss (1992, 1994, 1998a, 2002) claims that the first obligatory stress of the Hungarian sentence falls on the first major grammatical constituent of the

¹⁸ This review of Brassai’s work is based on É. Kiss (1981b).

predicate part of the sentence (corresponding to Brassai's *bulk*). The (possibly multiple) constituents situated in the field preceding the predicate part, which can also bear an accent, though less prominent than the one on the predicate, are situated in *topic* positions. In her example repeated as (25a) below, the first obligatory stress of the sentence falls on a non-initial constituent, which indicates that the constituent preceding it is situated in the topic position. In (25b), however, this stress falls on the sentence-initial constituent, which shows that it cannot be in the syntactic topic position:¹⁹

- (25) a. [_{Topic} János] [_{Predicate} \RAJzolt egy autót.]
 John drew a car.ACC
 'John drew a car.'

(É. Kiss 1998a: 22)²⁰

- b. [_{Predicate} \MINden fiú focizni akart.]
 every boy football.play.INF wanted
 'Every boy wanted to play football.'

(É. Kiss 1998a: 23)

É. Kiss argues, in addition, that what she refers to as the first obligatory stress in the Hungarian sentence is the heaviest grammatical stress. Current overviews on the prosodic structure of Hungarian, like Kálmán and Nádasy (1994) and Varga (2002), however, do not subscribe to the view of there being a single strongest stress within the Hungarian sentence, and argue that "[i]n Hungarian phrases all lexical words that convey new information retain their major stress, and so several, roughly equal, major stresses can occur" (Varga 2002: 139). Varga (2002: 127) distinguishes between three degrees of phonological stress in Hungarian: major, minor and zero. Major stressed syllables are marked both by extra intensity as compared to unstressed syllables and by melodic prominence, the latter of which means that they initiate one of the character contours of Hungarian. Due to the latter kind of prominence, major stressed syllables are often called accented or pitch-accented (to be followed here). Minor-stressed syllables are only marked by intensity but not by pitch accent. Zero-stressed (or unstressed) syllables are characterized by the lack of pitch accent and of extra intensity. The major stresses can, naturally, be subject to syntactically or semantically/pragmatically motivated deaccentuation. One of the syntactically motivated deaccentuation processes, which we will very often take for granted in what follows, involves the deaccentuation of the verb after a constituent in the preverbal focus position (to be discussed below). For example, Varga considers (26), with the constituent *kávét* 'coffee.ACC' in the preverbal focus position, to be well-formed with the stress pattern indicated, where the symbols "´" and '̀' mark major and minor stresses, respectively:

¹⁹ For further prosodic tests by means of which the topic and the predicate parts of the sentence can be separated, see Kálmán (2001).

²⁰ (25a, b) are reproduced here in a minimally modified form reflecting the conventions introduced at the beginning of the chapter about stress and tone marking.

- (26) 'János 'mindig 'kávét ɨszik a 'büfében.
 John always coffee.ACC drinks the snackbar.INESS
 'John always drinks coffee in the snack-bar.'

(Varga 2002: 143)

Varga also argues that the following variants of (26), indicating different options for destressing preverbal constituents, are also grammatical in Hungarian:

- (27) a. ɨJános ɨmindig a 'büfében ɨszik ɨkávét.
 b. 'János 'mindig a 'büfében ɨszik ɨkávét.
 'It is in the snack-bar that John always drinks coffee.'

(Varga 2002: 143)

The above data thus suggest that the prosodic requirement for identifying topics proposed by É. Kiss must be modified in the following way: the topic constituents of the Hungarian sentence must precede the constituent whose major stress or pitch accent is not reducible due to syntactic or semantic/prosodic reasons. In the sentences illustrated in (27), it is the constituent that immediately precedes the verb (*a büfében*) that satisfies the latter criterion, although it is not identical to the predicate-initial constituent in É. Kiss's terms. (The predicate-initial constituent would be the quantifier *mindig*.) Thus, it seems that the prosody-test above does not determine unambiguously the right edge of the domain (the left edge being the sentence-boundary) within which topics can appear. For major-stressed expressions in the topic position, É. Kiss assumes that they bear a falling pitch accent unless they are bound to receive a contrastive interpretation, a claim that is debated by Varga (2002), to be discussed below.

Let us turn now to the second test proposed by É. Kiss, which is based on the position of sentence adverbials. É. Kiss claims that sentence adverbials can appear either before, between or after syntactic topics, therefore, topics must be situated left to the rightmost position where a sentence-adverbial can appear:²¹

- (28) a. Sajnos [NP az új autónak] [NP Péter] [AspP megnyomta az
 sadly the new car.DAT Peter VM.hit the
 elejét].
 front.its.ACC
 'Unfortunately Peter hit the front of the new car.'

(É. Kiss 1998a: 27)²²

²¹ This approach presupposes that sentence-adverbials are not in the topic position. However, they must be situated in front of the predicate part of the sentence according to the prosody-test discussed above.

²² In this and the following examples the labelling of the constituents is adapted to É. Kiss's (2002) framework.

- b. [_{NP} Az új autónak] állítólag [_{NP} Péter] [_{AspP} megnyomta az
the new car.DAT allegedly Peter VM.hit the
elejét].
front.its.ACC
'Allegedly, Peter hit the front of the new car.'

(É. Kiss 1998a: 27)

- c. [_{NP} Az új autónak] [_{NP} Péter] feltehetőleg [_{AspP} megnyomta
the new car.DAT Peter supposedly VM.hit
az elejét].
the front.its.ACC
'Supposedly, Peter hit the front of the new car.'

(É. Kiss 1998a: 27)

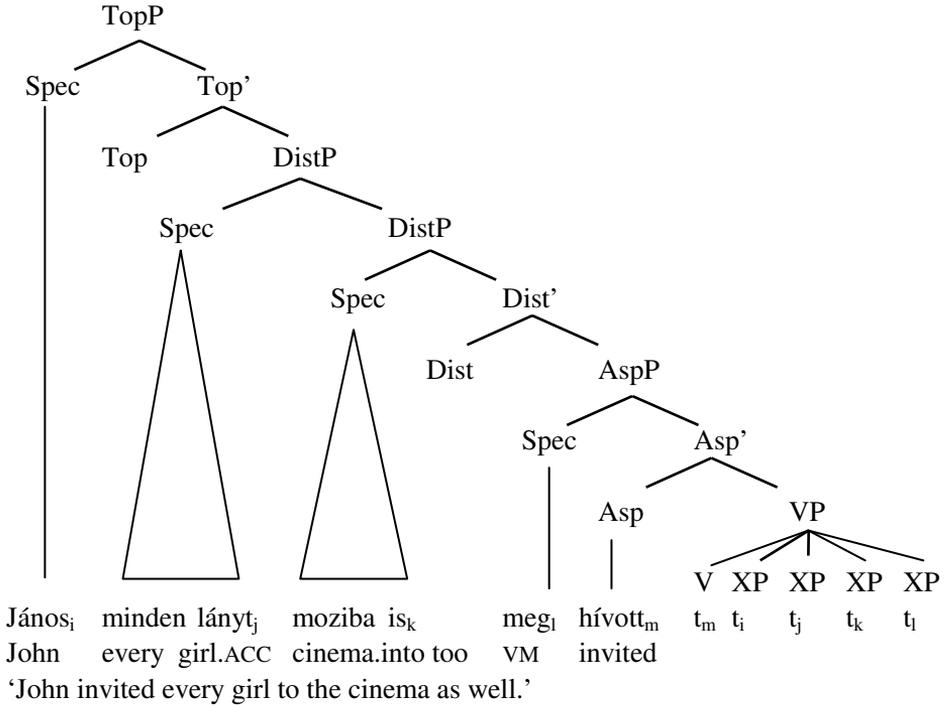
The following pair of sentences shows that the above test excludes universal noun phrases from the topic position:

- (29) a. Állítólag minden fiú focizni akart.
allegedly every boy football.play.INF wanted
'Allegedly, every boy wanted to play football.'

- b.* Minden fiú állítólag focizni akart.
every boy allegedly football.play.INF wanted

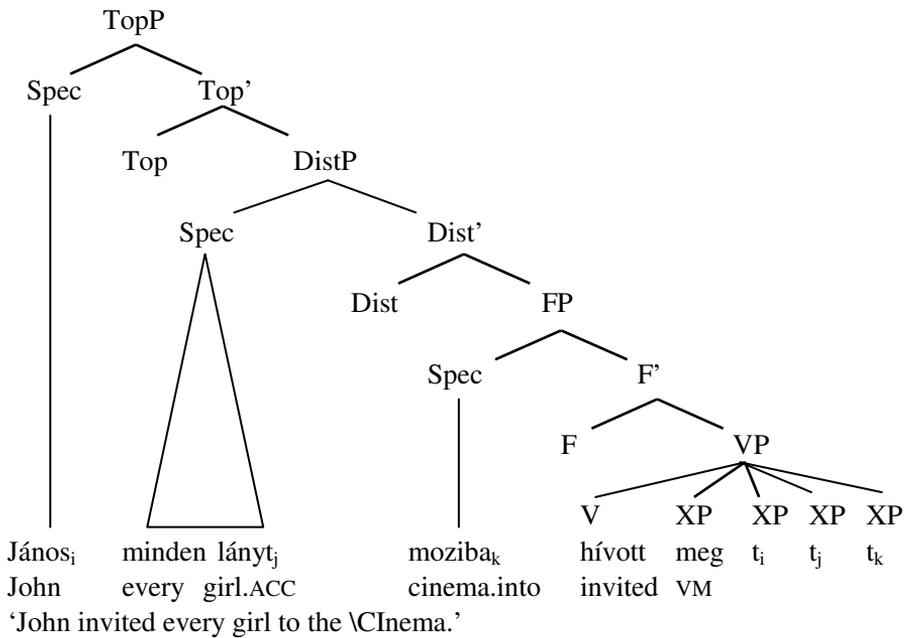
The syntactic structure of sentences containing a constituent in [Spec,TopP] is analysed in É. Kiss's 2002 framework as illustrated in (30a,b) below. É. Kiss (2002: 112–113) assumes a structural difference between sentences that lack a focus constituent expressing exhaustive identification, as in (30a), and those containing one, as in (30b). The difference between the surface strings corresponding to the two constructions is that in the first case, verbal modifiers are situated preverbally, whereas in the second case they occupy a postverbal position.

(30) a.



(after É. Kiss 2002: 112)

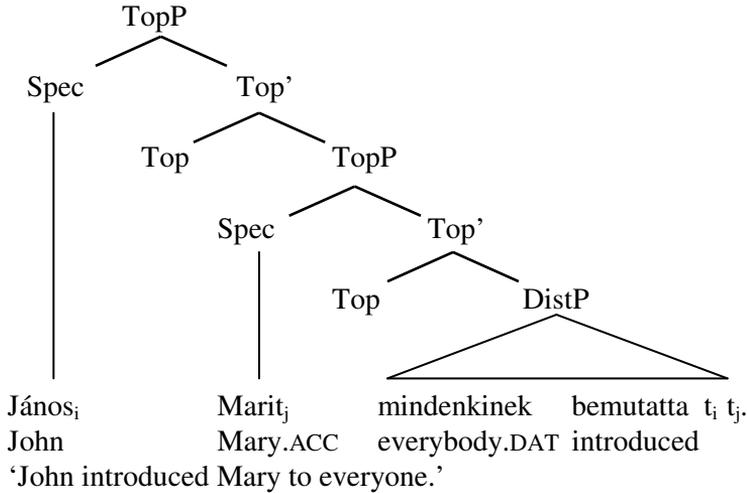
b.



(after É. Kiss 2002: 113)

In the structures shown in (30a,b) above, the specifier of the DistP projection is reserved for distributive quantifiers (cf. Szabolcsi 1997a). Among the preverbal positions, constituents denoting (rightward) monotone decreasing or non-monotonic quantifiers like *kevés ember* ‘few men’, and *pontosan háromszor* ‘exactly three times’, etc., can only occupy the immediately preverbal one, which É. Kiss (2002) assumes to be identical to the specifier of the focus projection.²³ (31a, b) illustrate the structure of sentences with multiple syntactic topics in this theory (cf. É. Kiss 2002: 13):

(31) a.



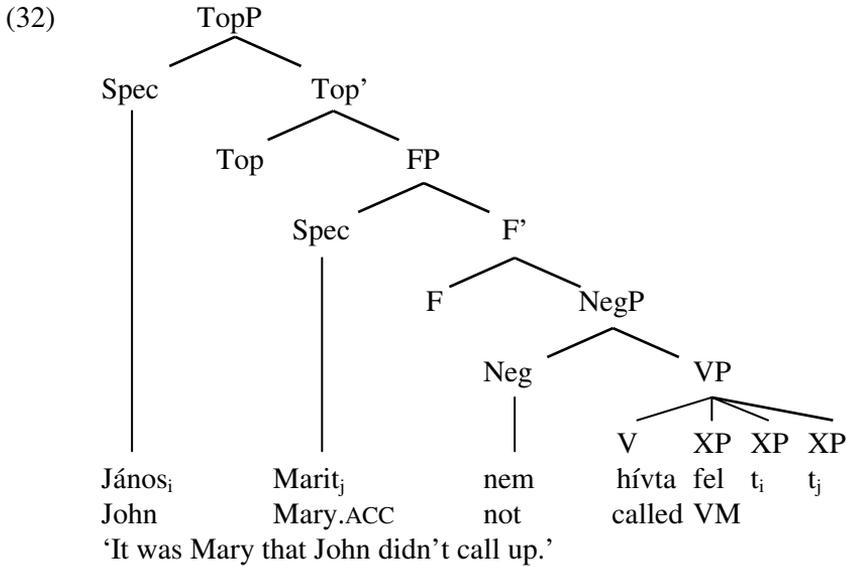
b. Marit_j János_i mindenkinek bemutatta t_i t_j.

(after É. Kiss 2002: 13)

²³

In view of the fact that the above, immediately preverbal constituents lack some of the semantic properties associated with foci in Hungarian, Szabolcsi (1997) a proposes that they are situated in the specifier of a Predicate Operator projection, which cannot be filled whenever the specifier of the FP projection is also filled. Since I believe that the issue is tangential to my interests here, in the rest of this work I will not assume a separate Predicate Operator projection, and follow É. Kiss’s terminology in this matter.

In sentences containing VP-negation, no AspP is projected (cf. É. Kiss 2002: 132), as illustrated in (32):



(after É. Kiss 2002: 132)

Constituents in [Spec, DistP] and [Spec, FP] can also be negated. In that case, the DistP or FP projections are dominated by NegP projections.

The often cited claim²⁴ that Hungarian “wears its LF on its sleeve” is reflected particularly clearly in the rules governing the assignment of scope to quantificational expressions, since the scope principle of generative grammar, according to which operators scope over the domain they c-command, is already satisfied in the visible syntax in Hungarian, as the English translations for the sentences in (30)–(32) indicate.²⁵

3.3 Are syntactic topics aboutness topics as well?

Having considered the syntactic characteristics of the topic position of the Hungarian sentence, the following questions arise. First, are all constituents that occupy this position (or their denotations) possess the properties that have been attributed to aboutness topics in the semantics/pragmatics literature, reviewed in section 2 above? Second, must aboutness topics in the Hungarian sentence be always situated in the topic position?

The fact itself that there can be several syntactic topics within one sentence appears to suggest a negative answer to the first question, since it is very difficult to imagine that a sentence could be about two independent things at the same time. Krifka (1999), however, proposes a way to reconcile the presence of multiple topics with the requirement that they express aboutness by saying that if there are

²⁴ Originally due to Edwin Williams (courtesy of István Kenesei, p.c.).

²⁵ Sentence (1b) above constitutes an exception to this claim, which will be discussed below.

several topics in a sentence, they are not ranked equally, but one of them has “scope” over the other. “The speaker selects one discourse entity as a main topic at which a piece of information is to be stored, but structures this piece of information further into a secondary topic and a comment” (p. 114.). In a different paper, Krifka (2007: 30) he claims that sentences with multiple syntactic topics could be interpreted as being about the relation between the two topics (which could be modelled using Reinhart’s file-card metaphor by introducing a card that contains information concerning both topics). This solution presents more problems for the Hungarian data in view of the mapping between syntax and semantics, given that multiple topics do not form a syntactic constituent in this language, as shown in ((31a, b) above).

É. Kiss (1992, 1998a, 2002) emphasizes that on the assumption that constituents in the topic or [Spec, TopP] positions identify a referent that the rest of the sentence predicates a property about, several features of syntactic topics are explained. These include the requirement that syntactic topics must be *referring expressions*, i.e. expressions capable of picking out a person or a thing or groups of these, or *generic expressions* referring to kinds,²⁶ and that particular quantificational expressions like the one appearing sentence-initially in the following sentence, are excluded from the topic position:

- (33) * [_{Topic} Kevés várat] [_{Predicate} meg védtek a zsoldosok a
 few fort.ACC VM defended the mercenaries the
 törökök ellen.]
 Turks against
 ‘Few forts were defended against the Turks by the mercenaries.’
 (É. Kiss 2002: 10)

Being a referential expression is a necessary condition for a constituent to be able to land in topic position, although not a sufficient one. É. Kiss argues that syntactic topics, additionally, have to satisfy the condition of being specific, that is, having a referent that is already in the domain of discourse, which automatically applies to proper names and definite noun phrases, and applies to indefinite noun phrases if they are assumed to denote an individual that is an element of a set already referred to (cf. Enç 1990). For example, É. Kiss (2002) argues that the following sentence will only be well-formed if the indefinite NP *egy autó* refers to an element of a set of cars that has been mentioned before:

- (34) [_{Topic} Egy autó] [_{Predicate} megállt a házunk előtt.]
 a car VM.stopped the house.our in.front.of
 ‘One of the cars stopped in front of our house.’
 (É. Kiss 2002:10)

²⁶ This reasoning indicates that, according to É. Kiss, statements can only be about entities, which McNally (1998) argues against, as discussed in Section 2.

Note that the requirement that syntactic topic expressions should have a specific interpretation in the above sense is weaker than the requirement that they should be familiar to the speaker and addressee, or be uniquely identifiable to them, as Gundel's (1985) theory, cited above, requires.

There are, however, also cases where an indefinite noun phrase without a specific reading appears to occupy the topic position of the sentence:

- (35) [_{Topic} Valami] [_{Predicate} leesett a tetőről.]
 something VM.fell the roof.from
 'Something has fallen from the roof.'

(É. Kiss 2002: 11)

- (36) [_{Topic} Egy gyerek] [_{Predicate} virágot szed a kertedben.]
 one child flower.ACC picks the garden.your.in
 'A child is picking flowers in your garden.'

(Maleczki 1998: 261, labeling and glosses added)

É. Kiss (2002) argues that, contrary to appearances, the sentence-initial noun phrase in (35) does satisfy the condition of specificity because it can refer to some phenomenon in the extralinguistic context (e.g. an object flying past the window), about which the sentence makes a predication. In order to check whether the sentence-initial noun phrases in the sentences above possess the properties that have been assumed to characterize the constituents occupying the [Spec, TopP] position by É. Kiss, let us apply the prosody-test and the test concerning the position of sentence adverbials, mentioned above. (37a) and (38a) show that sentences (35)–(36) cannot be pronounced in a way that the only stress of the sentence falls on the constituent immediately following the sentence-initial constituent (that is, the prefixed verb and the verbal modifier, respectively). The only possible way to pronounce them is as shown in (37b) and (38b), where all constituents following the sentence-initial constituent bear equal stresses (with the exception of the verb of the second sentence (which is deaccented, cf. Section 3.2 above):

- (37) a.*Valami \LEesett a tetőről.
 b. Valami \LEesett a \TEtőtől.
 (38) a.*Egy gyerek \VÍrágot szed a kertedben.
 b. Egy gyerek \VÍrágot szed a \KErtedben.

The second test involves inserting *valószínűleg* 'probably', a sentence adverbial, between the alleged syntactic topic and the rest of the sentence:

- (39) a.*Valami valószínűleg leesett a tetőtől.
 b. Valószínűleg valami leesett a tetőtől.

- (40) a.*Egy gyerek valószínűleg virágot szed a kertedben.
 b. Valószínűleg egy gyerek virágot szed a kertedben.

(39)–(40) show that the sentence adverbial *valószínűleg* ‘probably’ cannot be inserted after the sentence-initial constituents of (35)–(36), only in front of them. It seems to me that the only way to interpret these data is to say that the initial noun phrases in (35) and (36) are not situated in the [Spec, TopP] positions of their sentences (at least given the manner these constituents are identified). I do not wish to make any claims as to what positions these constituents are actually situated in, but I believe it would accord more with the generative syntactic framework to postulate a separate projection to host them as to assume, following L. Kálmán et al. (1986) and Gy. Kálmán C. et al. (1989) that Hungarian has two basic (declarative) sentence-types with completely different syntactic structures.

In addition to not being syntactic topics, the denotations of the sentence-initial constituents of (35)–(36) do not satisfy the pragmatic definition of aboutness topics, either, since the sentences can at best be considered to be about a contextually specified space/time, as discussed with respect tothetic sentences in Section 2. (The latter constituents would not be considered topics in the topics-as-questions approach, either, since otherwise (35)–(36) would have to be situated in a discourse where a non-specific something or a non-specific child has been asked about, respectively, which seems to be contradiction.)

Answering the second question formulated at the beginning of the section is complicated by the fact, already referred to above, that it is very difficult to set up objective criteria for finding out what a sentence in a natural language is supposed to be about. The assumption that only the constituents in the syntactic topic position can encode aboutness topics, often found in the literature, can be justified, I believe, by Gricean reasoning: since there is a position in the Hungarian sentence that can host constituents about the denotation of which the speaker intends the sentence to be about, the fact that a speaker does not make use of it in the case of a particular constituent signals that the denotation of the latter was not viewed by her as one the sentence is about.

In this section we investigated the most important syntactic and semantic properties of the constituents situated in what has been called the syntactic topic position of the Hungarian sentence. Now we turn to the general properties of constituents that have been identified as contrastive topics in the Hungarian literature.

4 Some general properties of the contrastive topic in Hungarian

4.1 Distinguishing between ordinary and contrastive topics

In this section we provide an informal characterization of the syntax and semantics of a range of Hungarian sentences that have been claimed in the literature to contain contrastive topics. The first systematic description of the syntax and

- c. /KÉT fiú [FP \KEDden jött meg.]
two boy Tuesday.on came VM
'TWO boys arrived on \TUESday.'
- d. Két /FIú [FP \KEDden jött meg.]
two boy Tuesday.on came VM
'Two /BOYS arrived on \TUEsday.'

(42a) states about John that I didn't see him, and contrasts him implicitly to other relevant individuals (i.e. those about whom the issue of me having seen them could also be raised), although it does not convey any information regarding the fact whether I have seen any of these individuals. Sentence (42b) is about the tent, and predicates about this object the property of Peter having slept in it, and contrasts it to other relevant places (i.e. about which the issue of people having slept there could be raised). (42c) is ambiguous. The first reading, on which the sentence-initial noun phrase gets a specific interpretation, expresses that two members of a particular set of boys arrived on Tuesday, which are contrasted implicitly to other members of the same set. The second reading, on which the noun phrase receives a non-specific interpretation, expresses that it was on Tuesday that a group of two boys arrived, implying that groups of boys of other cardinalities arrived on other days. A variant of this sentence, (43d), where the rising pitch accent falls on the noun, has only one reading, which is truth-conditionally identical to the last one, but introduces a contrast between groups of two boys and groups of other types of individuals (e.g. girls) of the same cardinality.

Regarding the syntactic position of the contrastive topics, É. Kiss (1987, 1992, 1994) proposes that instead of being situated in the position for ordinary topics, which has to be occupied as a result of movement, they are base generated in left-dislocated position under an E(xpression) node (cf. Emonds 1985). This strategy successfully accounts for the fact that they license resumptive pronouns, as in (43), and that they are not always grammatical in subordinate clauses, as in (44):²⁹

- (43) (/)JÁnost, azt \NEM láttam.
John.ACC that.ACC not saw.1SG
'As for John, I did not see him.'
- (44) ?Mari hallotta a hírt, hogy /JÁnost \MEGgyanusították.
Mary heard the news.ACC that John.ACC VM.suspected.3PL
'Mary heard the news that as for John, he came under suspicion.'

There is one substantial argument against the latter approach, however, namely, that the order of ordinary topics and contrastive topics is not fixed in the sentence, as pointed out by Molnár (1998) and Alberti and Medve (2000), illustrated below:

²⁹ I thank an anonymous reviewer of Gyuris (2008a) for directing my attention to these advantages of É. Kiss (1987, 1992, 1994).

- (45) a. [_T János] a /LEvest [_{AspP} \MEGette] (, de a /HÚST
 John the soup.ACC VM.ate but the meat.ACC
 [_{NegP} \NEM]).
 not
 ‘As for the soup, John did eat it (, but he did not eat the \MEAT).’
- b. A /LEvest [_T János] [_{AspP} \MEGette] (, de a /HÚST
 the soup.ACC John VM.ate but the meat.ACC
 [_{NegP} \NEM]).
 not
 ‘As for the soup, John did eat it (, but he did not eat the \MEAT).’

On the basis of the latter type of data, Alberti and Medve (2000) propose that contrastive topics are situated in the specifier position of a CTopP projection, which they occupy as a result of movement. CTopP projections can dominate and be dominated by TopP projections.

The previous discussion might suggest that the set of contrastive topics in Hungarian is co-extensional with the set of constituents that are situated in positions that satisfy the tests characterising the [Spec, TopP] position, and are pronounced with a rising tone. However, the matter is more complicated than that. On the one hand, as pointed out by Varga (2002), there are sentences in Hungarian where the topic is pronounced with a rising pitch accent for phonological reasons, although it does not introduce any kind of contrast:

- (46) |A 'tengeralattjáró 'legénysége | `szabadságra ment.
 the submarine crew.its holiday.on went.3SG
 ‘The crew of the submarine went on holiday.’
 (Varga 2002: 87, prosodic marking retained)

On the other hand, the data in (43) and in (47) show that after inserting a resumptive element into (42a–d), the (inflected form of the) distal demonstrative element *az* ‘that’, intended to be coreferential with the sentence-initial constituent, the rising accent on the contrastive topic becomes optional,³⁰ as indicated below, without changing the intended interpretation of the sentence:

- (47) a. A (/)SÁtorban, abban \Péter aludt.³¹
 the tent.in that.in Peter slept
 ‘As for the tent, it was Peter who slept in it.’
- b. (/)KÉT fiú, az \KEDden jött meg.
 two boy that Tuesday.on came VM
 ‘/TWO boys arrived on \TUESday.’

³⁰ Observed by Szabolcsi (1980).

³¹ The adverbial *ott* ‘there’ can also function as the resumptive element in this example.

- c. Két (/)FIÚ, az \KEDden jött meg.
 two boy that Tuesday.on came VM
 ‘Two /BOYS arrived on \TUEsday.’

A possible way to test whether a constituent with a rising pitch accent is intended to have a contrastive interpretation is to see whether the insertion of one of the particles *bezzeg* or *azért* ‘however’ immediately after the latter constituent alters the interpretation of the sentence, that is, whether it introduces an implicit contrast that is otherwise missing.³² (48a, b) illustrate the test for (42b, c):

- (48) a. A /SÁtorban azért [FP \PÉter aludt.]
 the tent.IN however Peter slept
 ‘As for the tent, it was Peter who slept in it, however.’
- b. /KÉT fiú bezzeg [FP \KEDden jött meg.]
 two boy however Tuesday.on came VM
 ‘/TWO boys arrived on \TUEsday, however.’

Naturally, it is almost impossible to decide about a sentence in isolation whether a constituent bearing a rising pitch accent in it is to be interpreted as contrasted or not. This is the reason why the role of contrastive topicalization in the structuring of discourses has been emphasized in various theories, to be discussed below.

In this section we have considered contrastive topic constituents that could be interpreted – preferably but not necessarily with a different intonation – as ordinary topics as well. In Section 4.3 we turn to cases where constituents that cannot occupy the ordinary topic position of the sentence if pronounced with the falling topic intonation evoke the same kind of semantic contrast as the contrastive topics investigated so far, provided that they are pronounced with a rising pitch accent or/and are followed by an appropriate resumptive pronoun. Before that, in Section 4.2 we look at the types of pitch-accented constituents that immediately follow contrastive topics.

4.2 Are contrastive topics followed by foci?

In all the Hungarian examples cited above, the contrastive topic was followed by a pitch-accented constituent either occupying a preverbal position or identical to the verb itself. (49) shows that a sentence where the sentence-initial constituent bearing a rising pitch accent is followed by a range of constituents bearing even stresses but no falling pitch accent (that is, minor stressed constituents according to Varga 2002), is ill-formed in Hungarian.³³ (50) illustrates the latter’s grammatical

³² Further constituents with a similar function are *pedig*, *bizony*, *ugyan* ‘however’, as observed by Szabolcsi (1980).

³³ Whereas Hungarian seems to share this requirement with German and English, as the examples to be discussed in this book will show, it is unclear to me at the moment whether this can be considered a universal property of languages. It was first pointed out by Hara (2006) that in Japanese contrastive topics can but need not be accompanied by a (second) expression bearing a focus accent. According to Tomioka (2008), the pitch range of the material following the former type of constituent can even get dramatically

counterpart where all the (meaningful) constituents bear minor stresses (or are pronounced with ‘level prosody’, cf. Kálmán and Nádasy 1994), which is a felicitous answer to a *What happened?* question:

(49) * /János _{el}ment a _{boltba} _{kenyérért}.³⁴
 John VM.went the shop.into bread.for

(50) 'János 'elment a 'boltba 'kenyérért.
 John VM.went the shop.into bread.for
 ‘John went to the shop to buy bread.’

It was first pointed out by Szabolcsi (1981b) that a contrastive topic has to be followed either by focus or negation, and has since been discussed by many other authors, including, for example, Kenesei (1989) or Molnár (1998). As the following survey shows, the constituents bearing a falling pitch accent that follow the contrastive topic can be situated in the initial positions of various projections (in the framework of É. Kiss’s 2002 theory) on the left periphery of the Hungarian sentence (that is, left to or identical to the verb). These include FPs, as in (51a), DistPs, as in (51b) and (51c), NegPs, as in (51d), AspPs, as in (51e), and VPs, as in (51f). In the latter two kinds of structures, the stressed verb can either be interpreted as contrastively focused or as an instance of *verum focus*. This means that in the former case, the verb *elolvasta* ‘VM.read’ is contrasted to verbs with an alternative interpretation (e.g. *glanced over*, *learnt by heart*, *wrote a review about*, etc.), and in the latter case with its negation.

- (51) a. /János [_{FP} \MArival találkozott össze.]
 John Mary.with met.3SG VM
 ‘As for John, he met MARY.’
- b. /János [_{DistP} \MINden gyerekkal összetalálkozott.]
 John every child.with VM.met.3SG
 ‘As for John, he met every child.’
- c. /János [_{DistP} \MArival is összetalálkozott.]
 John Mary.with also VM.met.3SG
 ‘As for John, he met Mary as well.’

reduced. Lee (2008), in view analogous evidence from Korean, however, expresses his doubts about that contrastive topics can appear without a focus in a sentence, and discusses various possible ways of reconciling the lack of explicit focus marking with the presence of semantic focus.

³⁴ In (49) and (50) we mark minor stressed syllables (i.e. those that are not marked by higher pitch) the way Varga (2002) marks minor stress, but retain the convention introduced in Section 1 for marking pitch accented syllables.

- d. /JÁnost [_{NEgP} \NEM láttam.]
 John.ACC not saw.1SG
 ‘As for John, I haven’t seen him.’
- e. /JÁnos [_{AspP} \ELolvasta az újságot.]
 John VM.read the newspaper.ACC
 ‘As for John, he \READ / did read the newspaper.’
- f. /JÁnost [_{VP} \LÁTtam.]
 John.ACC saw.1SG
 ‘As for John, I \HAVE seen him.’

What the sentences in (51a–f) share semantically is that the word with the falling pitch accent or a constituent it is part of is interpreted as the *semantic focus* of the sentence. (51d–f) are felicitous answers to *yes/no* questions and (51a–c, e, f) to constituent questions. The rules regulating whether prosodic prominence on a word in preverbal position can indicate focusing of the whole phrase containing it depends, as Kenesei (1998) observes, on the adjunct vs. argument or head status of the accented constituent. (Cf. also Kálmán and Nádasy 1994 for further discussion.) As answers to a questions of the *What happened?* type, all of (51a–f) are ‘underfocused’ (cf. Krifka 2001a), so dispreferred in the lack of specific contextual assumptions. (Using the terminology introduced by Stechow 1991, discussed below, (51a–f) are no *congruent answers* to a *What happened?* question.)

Whereas a non-accented constituent in the topic position can intervene between a contrastive topic and the constituent bearing the falling pitch accent, as illustrated in (45b) above, constituents excluded from the topic position, like universal DPs that follow a contrastive topic, must either be pronounced with a falling pitch accent or a rising one (thus constituting a second contrastive topic), as (52a–c) illustrate:

- (52) a. /JÁnos \MINden diákat megdicsért.
 John every student.ACC VM.met.3SG
 ‘As for John, he praised every student.’
- b. /JÁnos /MINden diákat \MEGdicsért.
 John every student.ACC VM.met.3SG
 ‘As for John and as for Every student, he did praise them / he praised them.’
- c. /JÁnos minden /DIÁkot \MEGdicsért.
 John every student.ACC VM.met.3SG
 ‘As for John and as for every STudent, he did praise them / he praised them.’

There is, however, no requirement that there be only one constituent bearing prosodic prominence after the contrastive topic in Hungarian. Kenesei (1998: 76) argues that “[i]f a VP is focused, the head and every one of its arguments must be marked for focus, i.e., the feature percolates down onto every one of them, and either the verb or one of the arguments moves into the designated focus positions with the rest of them (excepting the verb) remaining in situ and ultimately assigned focus stress”, as illustrated in the following example:³⁵

- (53) Péter [_{FP} a \HAMletet olvasta fel a \KERTben] (nem
 Peter the Hamlet.ACC read VM the garden.INE not
 pedig úszott).
 rather swim
 ‘What Peter did was read (out) Hamlet in the garden (rather than swim).’
 (Kenesei 1998: 77, labeled brackets added, notation changed)

Having analysed the syntactic and semantic properties of the pitch-accented constituent that follows the contrastive topic in a Hungarian sentence, we now turn to types of contrastive topics that cannot denote individuals.

4.3 Non-referential expressions as contrastive topics

The phenomenon that raises most doubts as to whether the term *contrastive topic* is a well-chosen one to characterize the interpretation of left-peripheral constituents that bear a rising pitch accent is that there are constituents in the latter group which, when pronounced with the ‘normal’, falling topic intonation, cannot appear in the topic position of the Hungarian sentence. The class of these expressions includes non-referential DPs denoting universal quantifiers, as in (54a), downward monotonic quantifiers, as in (54b), distributive quantifiers, as in (54c), and *csak* ‘only’-phrases, as in (54d). To show that they are situated in front of the predicate part, an optional sentence adverbial has been inserted into each sentence below:

- (54) a. /MINdenki (sajnos) [_{NegP} \NEM érkezett meg.]
 everybody unfortunately not arrived VM
 ‘EVERYbody \DIDN’T arrive, (unfortunately).’
 b. /KEvés fiú (valószínűleg) [_{FP} \KEDden érkezett meg.]
 few boy probably Tuesday.on arrived VM
 ‘FEW boys arrived on \TUESday, (probably).’

³⁵ Although Kenesei (1998) does not say that the prosodic marking on postverbal constituents in the case of VP-focus is equivalent to a pitch accent, for simplicity we will mark them using the convention introduced for pitch accents above. Investigations about the exact phonological status of postverbal constituents of the above kind is a topic for further investigation.

- c. /LEGalább egy könyvet (szerencsére) [DistP \MINden
at.least one book.ACC fortunately every
diák elolvasott.]
student VM.read
'At least /ONE book was read by \EVERy student, (fortunately).'³⁶
- d. /CSAK rizst (sajnos) [FP \JÁnos eszik.]³⁷
only rice.ACC unfortunately John eats
'Only /RICE is eaten by \JOHN, (unfortunately).'

If the rising pitch accent indicates contrastive topichood, then the question arises whether we should consider the whole left peripheral maximal projection as being identical to the contrastive topic or only the pitch-accented word within it. Previous literature on Hungarian (cf. Szabolcsi 1981b, Alberti and Medve 2000, É. Kiss 2002) favors the former approach, whereas Büring (1997, 2003), to be discussed below, prefers the latter strategy. Until further discussion, we will call, in accordance with the Hungarian tradition, the whole maximal projection that is situated on the left periphery of the sentence and has a rising pitch accent on one of its constituents the contrastive topic.

It was noticed by Szabolcsi (1981b) and Hunyadi (1981) that whenever a quantificational expression pronounced with a rising tone appears in the left peripheral position reserved for topics, as in (54a–d), it can or even must take narrow scope with respect to other preverbal operators, depending on the quantifier. For example, (54a) only has a reading where the negation must take wide scope over the universal quantifier. The above data thus appears to contradict the generalization, referred to above, according to which the scope principle of generative grammar is already observed in visible syntax in Hungarian (cf. É. Kiss 2002: 113), and indicates an asymmetry between the scope properties of contrastive topics and those of other preverbal operators. Theoretical approaches aiming to explain the phenomenon will be discussed in Chapter 3.

Constituents belonging to non-DP categories can also appear in the same left-peripheral position if pronounced with a rising pitch accent, evoking a covert contrast between their denotation and alternatives of the latter. (55) below shows infinitivals as contrastive topics (first discussed in Szabolcsi 1980, 1981a):

³⁶ The mismatch between the stress pattern of complex expressions as contrastive topics in Hungarian and their English translations is discussed in section 5 below.

³⁷ The examples in (i)–(iv) below illustrate the counterparts of (54a–d) that are formed with the insertion of a resumptive pronoun. *Az* = 'that', *azt* = 'that.ACC':

- (i) Mindenki, az \NEM érkezett meg.
- (ii) Kevés fiú, az \KEDden érkezett meg.
- (iii) Legalább egy könyvet, azt szerencsére \MINden diák elolvasott.
- (iv) Csak rizst, azt \JÁnos eszik.

- (55) a. Péter /ENni [VP \Evett].³⁸
 Peter eat.INF ate.3SG
 ‘As for eating, Peter did eat.’
- b. /LÁTni [VP \LÁTtam Pétert], de /BEszélni [NegP \NEM
 see.INF saw.1SG Peter.ACC but talk.INF not
 beszéltem vele.]
 talked.1SG with.him
 ‘As for seeing Peter, I did see him, but I haven’t talked to him.’
- c. /LÁTni [FP \PÉtert láttam,] [NegP nem Jánost.]
 see.INF Peter.ACC saw.1SG not John.ACC
 ‘As for seeing somebody, I saw Peter, and not John.’

Szabolcsi (1981a) claims that sentences like those in (55) come about by copying the finite verb into the topic position, which acquires the infinitival suffix there. The aim of this procedure is to generate the special semantic effect of contrast. The copying mechanism is necessary since the finite verb of the sentence is immobile, and cannot be placed into the left-peripheral position when the particular semantic effect associated with the contrastive topic (i.e. the contrast) is needed. This argument is supported by the fact that the occurrence of the infinitival form in any other position, for example, in the focus position or after the verb, is ungrammatical, as the relevant counterparts of (55a), shown in (56a–b), indicate:

- (56) a.* [FP \ENni evett Péter.]
 eat.INF ate.3SG Peter
 (Szabolcsi 1980: 76)
- b.* [FP \PÉter evett enni.]
 Peter ate eat.INF
 (Szabolcsi 1980: 76)

Whenever the finite verb is an auxiliary, as in (57a), its pitch-accented infinitive complement can simply occupy the left-peripheral position without the need for, and, in fact, without the option of copying,³⁹ as (57b) shows:

- (57) a. /ENni [NegP \NEM szabad a buszon.]
 eat.INF not allowed the bus.on
 ‘As for eating, it is not allowed on the bus.’
- b.* /ENni [NegP \NEM szabad enni a buszon.]
 eat.INF not allowed eat.INF the bus.on

³⁸ The variant of (55) that contains a resumptive pronoun is the following:

(i) Péter enni, azt evett.

³⁹ Huba Bartos, p.c.

When pronounced with a rising tone, adjectives and nouns constituting the nominal predicate of the sentence can occupy the same left-peripheral position, also introducing the relevant contrast. When the sentence lacks an overt copula, the latter predicate expressions become immobile like the finite verbs, so they need to be copied into the topic position and take the dative suffix, as shown in (58)–(59):⁴⁰

- (58) a. A film /JÓnak [FP \JÓ].
 the movie good.DAT good
 ‘As for being good, the movie is good.’
- b. /SZÉPnek [NegP \NEM szép Sári.]
 beautiful.DAT not beautiful Sarah
 ‘As for beauty, Sarah is not beautiful.’
- c.* /SZÉP [NegP \NEM Sári.]
 beautiful not Sarah
- (59) /SZAkácsnak [FP \SZAkács.]
 cook.DAT cook
 ‘As for being a cook, he is a cook.’

If the copula is present, however, as in (60a–c), the predicative adjective or noun bearing the rising pitch accent can be situated in sentence-initial position without taking the dative suffix:

- (60) a. /SZÉP [NegP \NEM vagyok.]
 beautiful not be.1SG
 ‘As for beauty, I am not beautiful.’
- b. /SZÉP [NegP \NEM volt Sári.]
 beautiful not was Sarah
 ‘As for beauty, Sarah was not beautiful.’
- c. /SZAkács [VP \VOLTam.]
 cook was.1SG
 ‘As for being a cook, I \HAVE been a cook.’

Bare nominals in argument positions can also appear sentence-initially when pronounced with the rising pitch accent:

⁴⁰ For recent analyses of the syntactic structure of sentences with preposed infinitivals like in (55) and adjectives and bare nouns with a dative suffix like in (58)–(59), cf. Gécség (2001) and Ürögdi (2006).

- (61) a. /Autót [FP \SOK gyerek látott.]
 car.ACC many child saw
 ‘As for cars, many children saw one.’
- b. /MAgas fiúval [FP csak \MAri beszélgetett.]
 tall boy.with only Mary talked
 ‘As for tall boys, only Mary talked to one.’

The next two examples show that verbal prefixes can also appear alone sentence-initially when pronounced with the rising pitch accent, and not only those that have directional uses, as in (62), but also those that do not have a lexical meaning outside their perfectivizing function, and thus cannot be contrasted with any other verbal prefix, as in (63):

- (62) /FÖL [FP \LIFten megyek.]
 up lift.on go.1SG
 ‘UPwards I will go by \Elevator.’
- (63) /MEG [NegP \NEM írtam még a cikket] (, de már
 VM not wrote.1SG yet the paper.ACC but already
 gondolkodtam rajta.)
 thought.1SG on.it
 ‘As for writing the paper, I have not written it yet (, but I have already been thinking about it).’

The synonymy of (63) and (64), the latter of which involves copying the whole verb into the sentence-initial position, seems to support Szabolcsi’s (1980) view, according to which the contrastive topicalization of the verbal prefix serves the function of contrastive topicalizing the verb, which cannot be moved out of its original position:

- (64) /MEGírni [NegP \NEM írtam még meg a cikket.]
 VM.write.INF not wrote.1SG yet VM the paper.ACC
 ‘As for writing the paper, I have not written it yet.’

The next pair of examples shows pitch accented adverbials in the same sentence-initial position:

- (65) a. /JÓL [FP \KAti oldotta meg a feladatot.]
 well Kate solved VM the task.ACC
 ‘Kate was the one who solved the task \WELL.’
- b. /KÉTszer [FP csak \PIStát hívta fel.]
 twice only Steve.ACC called.3SG VM
 ‘/TWICE she only called \STEVE.’

(66)–(67) below illustrate that the insertion of a coreferential pronoun or the particles *bezzeg* or *azért* retains the intended meanings of sentences containing sentence-initial pitch-accented constituents reviewed above, which suggests that the latter constituents also satisfy the semantic properties of contrastive topics:

- (66) a. Péter (/)ENni azt [VP \Evelt].
 Peter eat.INF that.ACC ate.3SG
 ‘As for eating, Peter did eat.’
- b. (/)SZÉP az [NegP \NEM vagyok.]
 beautiful that not be.1SG
 ‘As for beauty, I am not beautiful.’
- c. (/)MAGas fiúval azzal [FP csak \MAri beszélgetett.]
 tall boy.with that.with only Mary talked
 ‘As for tall boys, only Mary talked to one.’
- (67) a. /SZAkács azért [VP \VOLtam.]
 cook however was.1SG
 ‘As for being a cook, I \HAVE been a cook, however.’
- b. /KÉTszer bezzeg [FP csak \PIStát hívta fel.]
 twice however only Steve.ACC called.3SG VM
 ‘/TWICE she only called \STEVE, however.’

Having reviewed the range of constituents that can appear in left-peripheral position when bearing a rising pitch accent in a Hungarian sentence and receive an interpretation characteristic of contrastive topics, the next section will investigate to what extent the grammaticality of these sentences corresponds to the grammaticality of their counterparts in which the relevant constituents are situated in postverbal position.

4.4 Left-peripheral contrastive topics and their postverbal counterparts

In many cases, we find truth-conditional equivalence between sentences containing left-peripheral contrastive topic expressions and their counterparts where the same expression is situated in postverbal position, which strongly argues for an analysis assuming that contrastive topics occupy their sentence-initial position as a result of movement. Correspondences of the latter kind are to be observed between (54a–d) and (68a–d), (61a–b) and (69a–b), and (65a–b) and (70a–b), for example:

- (68) a. [NegP Nem érkezett meg mindenki.]
 not arrived VM everybody
 ‘It is not the case that everybody arrived.’

- b. [_{FP} \KEDden érkezett meg kevés fiú.]
 Tuesday.on arrived VM few boy
 ‘It was on Tuesday that few boys arrived.’
- c. [_{DistP} \MINden diák elolvasott legalább egy könyvet.]
 every student VM.read at.least one book.ACC
 ‘Every student read at least one book.’
- d. [_{FP} \JÁnos eszik csak rizst.]
 John eats only rice.ACC
 ‘It is John who eats only rice.’
- (69) a. [_{FP} \SOK gyerek látott autót.]
 many child saw car.ACC
 ‘Many children saw cars / a car.’
- b. [_{FP} Csak \MAri beszélgetett magas fiúval.]
 only Mary talked tall boy.with
 ‘Only Mary talked to tall boys / a tall boy.’
- (70) a. [_{FP} \KAti oldotta meg jól a feladatot.]
 Kate solved VM well the task.ACC
 ‘It was Kate who solved the task well.’
- b. [_{FP} Csak \PIStát hívtam fel kétszer.]
 only Steve.ACC called.1SG VM twice
 ‘It was only Steve whom I called up twice.’

The following pair of sentences illustrates a case where both a construction with a constituent intended as a contrastive topic and its variant with the same constituent in postverbal position are ungrammatical:

- (71) a.* [_{VP} \MEGbukott a vizsgán ötnél kevesebb fiú.]
 VM.failed the exam.on five.than fewer boy
- b.* /ÖTnél kevesebb fiú [_{VP} \MEGbukott a vizsgán.]
 five.than fewer boy VM.failed the exam.ON

(71a) illustrates the observation that downward monotonic and non-monotonic DPs (as well as negative adverbs of frequency, degree, and manner with a parallel meaning) can only occur postverbally if the immediately preverbal position is filled by some other constituent or the verb is negated (cf. Szabolcsi 1997 and É. Kiss

2002, among others).⁴¹ Its variant in (71b), with the quantificational DP intended as a contrastive topic, is ill-formed as well.

There are, however, cases where the parallel described above does not hold. For example, whereas (72a) (which disobeys the rule about filling the focus position with downward monotonic or non-monotonic DPs mentioned above) is only marginally acceptable,⁴² (72b), where the same DP occupies a left-peripheral position and is pronounced with the rising pitch accent, is impeccable. (As the English translations indicate, both of these sentences can only have a collective reading, to be discussed in Chapter 3.)

- (72) a. ?_[VP] \LEvizsgáztatnék ötnél kevesebb diákot.]
 VM.examine.COND.1SG five.than fewer student.ACC
 ‘I \WOULD examine (a group of) fewer than five students.’
- b. /ÖTnél kevesebb diákot _[VP] \LEvizsgáztatnék.]⁴³
 five.than fewer student.ACC VM.examine.COND.1SG
 ‘Fewer than /FIVE students I \WOULD examine.’

The next example illustrates another case where the parallelism is lacking: (73a), with an upward monotonic DP in postverbal position, is well-formed, whereas its counterpart (73b) with the same DP in sentence-initial position is not:

- (73) a. _[VP] \MEGbukott a \VIZSgán \TÖBB, mint \ÖT \FIÚ.]
 VM.failed the exam.on more than five boy
 ‘There are more than five boys who failed the exam.’
- b.*/TÖBB, mint öt fiú _[VP] \MEGbukott a vizsgán.]
 more than five boy failed the exam.on

The data in (72) and (73) show that the well-formedness of Hungarian sentences containing contrastive topics must be based on criteria partly different from those determining the well-formedness of the counterparts of these sentences with the same expression in postverbal position.⁴⁴ It will be argued in subsequent chapters

⁴¹ The explanation proposed for this case by Brody (1990) is that downward monotonic and non-monotonic quantificational expressions (referred to as ‘counters’ in Szabolcsi 1997) resemble *wh*-phrases in English: they have to check their inherent [+F] feature overtly, unless some other expression has already checked its [+F] feature overtly.

⁴² The sentence improves considerably with a major stress either on the numeral part of the determiner or the adverb *kevesebb* ‘fewer’.

⁴³ Modified version of one of É. Kiss’s (2000) examples.

⁴⁴ Gécseg (2001) argues for a structural analogy and synonymy between declaratives containing a contrastive topic expression and their counterparts where the same expression occurs in postverbal position and gets prosodic prominence. Although she does not describe the phonetic properties of the prosodic prominence she assumes, the contrast in well-formedness between the following pair of sentences shows that the prominence on the relevant postverbal constituent cannot be described as a falling pitch accent:

(i) /János \MINdenkit meglátogatott.
 John everybody.ACC VM.visited.3SG
 ‘As for John, he visited everybody.’

(ii) *\MINdenkit meglátogatott János.

that mismatches of the kind illustrated in (72)–(73) are due to the special semantic/pragmatic effects associated with contrastive topics. In cases where contrastive topicalization ‘saves’ an otherwise ungrammatical or marginally grammatical sentence, as in (72b), we will assume that meaning coercion takes place, which is facilitated by the semantic/pragmatic properties of contrastive topics. In cases where contrastive topicalization of a constituent of an otherwise acceptable sentence makes the sentence ungrammatical, we will assume that the new sentence does not satisfy the extra semantics/pragmatic requirements of utterances containing contrastive topics. The next section is going to give a preview of the most fundamental questions concerning the interpretation of contrastive topics.

4.5 Hungarian contrastive topics – towards an interpretation

Having investigated the range of constituent types that can appear in a left-peripheral position within the Hungarian sentence (which seems to be identical to the position where ordinary syntactic topics appear) and pronounced with a rising pitch accent or followed by a resumptive pronoun, we turn to the investigation of the interpretational features of these elements, also comparing their semantics to the interpretation of ordinary topics. Krifka (2007) claims that contrastive topics do not constitute a category of information packaging in their own right, but represent a combination of topic and focus.⁴⁵ Thus, given that topics denote what the sentence is about, and foci “indicate that alternatives play a role in interpretation” (Krifka 2007: 6), contrastive topics, according to Krifka, indicate alternative aboutness topics. Does the data about constituent types traditionally referred to as contrastive topics, illustrated above, also confirm this position? The assumption that contrastive topics introduce a set of alternatives, as pointed out already in Szabolcsi (1980, 1981a), discussed above, seems to be an uncontroversial one. It is more difficult to prove, however, that all categories of constituents that have been referred to as contrastive topics on the basis of their formal properties in the literature denote what the sentence is about, given that, as discussed above, speakers only have an intuition concerning aboutness if this relation is supposed to hold between an individual and a proposition.

Consider the following pair of examples with quantificational DPs as contrastive topics:

- (74) /KETtónél több alma [NegP \NEM volt az asztalon.]
 two.than more apple not was the table.on
 ‘More than /TWO apples were \NOT on the table.’

I think that the kind of prominence Gécseg thinks about must be a rising tone on the relevant postverbal constituent, which, by itself, indicates open-endedness, that is, the fact that the utterance is to be continued, preferably with the utterance of a sentence describing other aspects of the situation described by the first one and having analogous structure.

⁴⁵ A similar claim was made by von Stechow (1994) as well.

- (75) /MINden könyvet [FP \KÉT diák olvasott el.]
 every book.ACC two student read VM
 ‘Every book was read by \TWO students.’

It is easy to see that (74) cannot have an interpretation according to which the left-peripheral quantificational expression identifies an entity or entities to which the rest of the sentence ascribes a property, since the sentence can be true even if there are no more than two apples or even when there are no apples at all in the universe of discourse. Although the left-peripheral DP of (75) can be imagined to identify a set, the set of all books in the context, about which the rest of the sentence makes a predication, this is not the only possible reading of the sentence: (75) can also be interpreted as saying that the elements of a set of two students have the property of having read all the books assigned to him/her, in which case the set of books assigned to the individual students do not have to be the same at all.

In the face of the problems illustrated in (74)–(76), Alberti and Medve (2000) propose that an analysis according to which quantificational noun phrases as contrastive topics function as aboutness topics can be maintained if they are assumed to denote sets or kinds of individuals, and the rest of the sentence is interpreted as making a predication about these sets or kinds. É. Kiss (2000, 2002) argues that in sentences like (74)–(75), the quantificational DPs denote properties. According to her, the rising intonation has a special semantic function, namely, it indicates that the property in question is contrasted with its alternatives, and therefore it individuates the property due to the latter contrast.⁴⁶ As a result, the quantificational contrastive topics will have a similar denotation as other aboutness topics, which is characterized by É. Kiss (2000, 2002) as [+referential]. As opposed to Alberti and Medve (2000), É. Kiss (2000, 2002), argues that the predicate part of the sentence does not make a predication about the latter property, but about individual realizations of this property, thus assuming, indirectly, that the meaning of a sentence with a contrastive topic whose basic denotation is other than an individual is calculated in a manner different from standard functional application. For example, according to É. Kiss (2000), sentence (76) is about the property of being a bicycle, but its truth-conditions must make reference to instantiations of the property, that is, actual bicycles:

- (76) /BIciklit [FP \SOK lány látott.]
 bicycle.ACC many girl saw
 ‘As for bicycles, many girls have seen one.’

(É. Kiss 2000: 89)

É. Kiss (2000, 2002) claims, furthermore, that contrastive topics, besides satisfying the constraint [+referential], also satisfy the constraint [+specific], that

⁴⁶ The proposal is inspired by Szabolcsi (1983), according to whom the placement of a bare nominal into the preverbal focus position evokes a contrast between the latter’s denotation, a property, and alternative properties, and it is through this contrast that the former property gets individuated. The proposals made by Alberti and Medve (2000) and É. Kiss (2000) will be discussed thoroughly in the next chapter.

is, the individuated property denoted by them has to be an element of a previously introduced set of properties.

With respect to the strategy outlined above, the following problems arise. It is not clear from the theories proposed by Alberti and Medve (2000) and É. Kiss (2000, 2002) what the relation between the contrastive topicalization of a constituent and its property- (or set-, type-) denotation is. If it is a result of contrastive topicalization that it provides a constituent with a property-denotation, then why do proper names not acquire a property-denotation in this position, cf. (51a–f) above, why are sentences with DPs containing bare numeral determiners as contrastive topics, illustrated in (77), give rise to scope ambiguity, and what kind of property do adverbs of quantification as contrastive topics, illustrated in (78), denote?

- (77) /KÉT fiút [NegP \NEM láttam.]
 two boy.ACC not saw.1SG
 i. ‘There are two boys that I haven’t seen.’
 ii. ‘I haven’t seen any two boys.’
- (78) Péter /MINDig [FP \AKkor ment moziba, amikor
 Peter always then went movies.into when
 szabadnapos volt].
 has.a.day.off was
 ‘Peter always went to the movies when he had a day off.’

Given that, as we have seen, the range of possible contrastive topics in Hungarian cannot be assigned a unique semantic type, and that there are no tests available that could specify, for all denotations of type τ whether a sentence S is about a denotation of type τ , the only possible way to determine whether a sentence is about the denotation of a particular constituent is to rely on the strategy referred to above as the topic-as-question approach, and check whether the sentence can be uttered in a context in which the latter denotation has been asked about. We will turn to the discussion of this problem in Chapter 2, where we consider what requirements contexts have to satisfy to license the felicitous appearance of contrastive topics.

Before turning to the issues outlined above, in the last section of this chapter we look briefly at the principles determining the position of the pitch accent within contrastive topic DPs, and the interpretational correlates thereof.

5 A note on the prosody of contrastive topic DPs

In the rest of this work we will primarily concentrate on the semantic/pragmatic properties of sentences that contain a contrastive topic DP. In order to assist the reader in interpreting these examples, we summarize the most important principles that determine the relation between the location of the pitch accent within the latter type of constituent and its interpretation, which are slightly different from the

relevant principles in English or German, for example. The discussion to follow will stay at the level of summarizing the facts, and no attempt will be made at offering a deeper theoretical explanation. I am not aware of any discussion about the prosodic pattern of DPs or number phrases in preverbal positions in Hungarian, except for É. Kiss (2001), whose intuitions I do not share at several places. Note that the range of interpretations to be listed as available for a sentence containing a contrastive topic DP with a particular prosody are in full accordance with the view that the position of the neutral stress within a Hungarian phrase is on the left edge, cf. É. Kiss (1987–88) and Jacobs (1991–92).⁴⁷ The following three sentences illustrate the three possible distributions of the rising pitch accent(s) characterizing the contrastive topic DP *három könyvet* ‘three books’, and their interpretation. In order to make the intended interpretations more transparent, in brackets we illustrate how the discourse could be continued after the relevant sentence in a coherent way:

- (79) a. /HÁrom könyvet [FP \JÁnos olvasott el.]
 three book.ACC John read VM
 i. ‘THREE books were read by \JOHN (, but /FOUR books were read by \ANna).’
 ii. ‘Three /BOOKS, they were read by \JOHN (, but Mary’s /ARticle was read by \ANna).’
- b. Három /KÖNYvet [FP \JÁnos olvasott el.]
 ‘Three /BOOKS were read by \JOHN (but three /NEWSpapers were read by \PEter).’
- c. /HÁrom /KÖNYvet [FP \JÁnos olvasott el.]
 ‘As for THREE BOOKS, that many were read by JOHN (but TWO NEWSpapers were read by EVE).’

(79a) is used felicitously, for example, if the speaker intends to contrast the property of a set of books having three elements to another property characterizing the cardinality of a set of books, and is an appropriate partial answer to a question asking for the names of persons that read sets of books of various cardinalities. The sentence can also be used in case the speaker wishes to indicate a contrast between three particular books and another entity, e.g. Mary’s article. (79b) is felicitous if the speaker intends to express a contrast between three books and three pieces of other type of things that could be considered alternatives to books, e.g. newspapers. It provides a felicitous partial answer to the question asking for the names of persons that read three pieces of various kinds of given printed materials. (79c) is felicitous if the speaker intends to contrast sets of different items and of different

⁴⁷ This assumption runs, however, into problems with various syntactic constructions, as well-known in the literature. Consider, for example, Kálmán and Nádasy (1994), Varga (1987–88) or Varga (2002) for more discussion.

cardinalities to each other individually, for example, *three books* to *two newspapers*.

We turn now to the prosody of contrastive topic DPs with modified numeral determiners, which appears to show some kind of similarity to focus projection phenomena in English and German. The default way of contrasting the whole determiner is to place the rising pitch accent on its first word, as illustrated in (80):

- (80) /TÖBB, mint három könyvet [FP \JÁnos olvasott el.]
 more than three book.ACC John read VM
 ‘As for more than three books, that many were read by \JOHN (but less than two books were read by \PEter).’

It is, naturally, possible to put the pitch accent on the numeral as well, but this will result in contrasting the cardinal number to a different one. The following sentence expresses that more than three books are contrasted to more than four books, for example:

- (81) Több, mint /HÁrom könyvet [FP \JÁnos olvasott el.]
 more than three book.ACC John read VM
 ‘As for more than THREE books, that many were read by \JOHN (but more than FOUR books were read by \EVE).’

Whenever the speaker only intends to contrast the meaning of the modifier *több, mint* ‘more’ (to the meaning of the modifier *fewer*, for example), the pitch-accented modifier needs to be followed by a pause, indicated below:

- (82) /TÖBB, | mint három könyvet [FP \JÁnos olvasott el.]
 more than three book.ACC John read VM
 ‘As for /MORE than three books, that many were read by \JOHN (but /FEWer than three books were read by \Susan).’

This closes our brief discussion of the stress pattern of contrastive topic DPs in Hungarian. In the next section, the results of the chapter are summarized.

6 Summary

The aim of this chapter was to outline the most important properties of the constituents that are traditionally referred to as *contrastive topics* in the Hungarian literature. Since the name of the construction seems to indicate that we are dealing with a concept of information structuring, we provided a review of the most well-known categories recognized in the research tradition concerned with the information structure of sentences. In this review we paid particular attention to the concept of *topic*, and looked at two approaches to capturing its interpretational properties, the approaches referred to as the topics-as-entities and the topics-as-questions approaches by McNally (1998). In Hungarian generative syntax

(following the proposals made by Katalin É. Kiss in various works), topics have been associated with a particular syntactic position on the left periphery of the sentence. Given that the left-peripheral constituents pronounced with the intonation pattern traditionally attributed to contrastive topics or followed by a coreferential resumptive pronoun seem to occupy the same syntactic position, we looked for a semantic trait common to ordinary syntactic and the constituents referred to as contrastive topics. We have established that taken in isolation, not all sentences containing a contrastive topics can be proven to be about the latter's denotation, therefore the contribution of contrastive topics to the information structuring of sentences is probably better analysed with reference to the properties of discourses where they felicitously appear. In the last part of the chapter, we looked at the internal stress pattern of contrastive topic DPs, the constituents whose semantics we will be concentrating on most in this work, and showed how the types of contrasts such constituents can give rise to are related to the fact that in Hungarian phrasal stress falls on the left edge of constituents.

II. The Contrastive Topic in the Discourse

1 Introduction

In the previous chapter we looked at several theories that are concerned with determining what it means for a constituent to be the topic of a sentence, and how topics can be identified. We have found that for a sentence considered in isolation, there are no explicit tests that could determine whether it is about a particular denotation (the criterion for being considered a topic in many theories), particularly if the types of potential topics do not only include individuals, but all denotations that constituents pronounced with a contrastive intonation (rising pitch accent) on the left periphery of the Hungarian sentence can be associated with. Therefore, intuitively, there remains only one way to determine whether a sentence is about the denotation of a particular constituent, namely, by looking at whether the sentence can only be used in a discourse where the relevant denotation has been asked about. In Chapter 1 we looked at one representative of the latter kind of theory, that proposed by von Stechow (1994), which considers topics anaphoric to questions, and concluded (primarily on the basis of criticism by McNally 1998 and von Stechow 1994 himself) that the latter approach is too weak to account for the contribution of topics either to the interpretation of the sentence or to the informational cohesion of the discourse. There are, however, alternative realizations of the latter general approach, which concentrate on what questions must be overtly or covertly present in a discourse in order for the appearance of left-peripheral constituents pronounced with the contrastive intonation to be licensed, which appear to be more promising, given that whereas sentences that have an ordinary topic can freely appear in isolation, sentences that contain a contrastively accented constituent impose much stricter requirements on the preceding context. The first significant theory that was concerned with the properties of discourses where sentences with contrastive topics can appear was proposed by Roberts (1996), later important achievements include Büring (1997) and (2003), Kadmon (2001), Sauerland (2005), Hara and van Rooij (2007), van Rooij (2008) and Wagner (2008),⁴⁸ among others.

In section 2 of this chapter, we will first discuss the theories by Büring (1997) and (2003) and Kadmon (2001), which set out to formally characterize, on the basis of English and German data, the contexts in which contrastive topics are allowed to appear, and consider whether they can be applied to the relevant Hungarian data. One of the general assumptions of these theories is that contrastive topics introduce the presupposition that there is an explicit or implicit ‘global’ question in the discourse that the sentence containing the contrastive topic only provides a partial answer to. Given the assumption made by several authors that at least some types

⁴⁸ Unfortunately, I learnt about the last three proposals too late in the process of preparing this book to include a substantial discussion of them here. The comparison of their claims and the claims made in this work must therefore be left for another occasion.

of declaratives with contrastive topics provide partial answers to multiple constituent questions, we look at the characteristics and subtypes of questions of the latter kind, at the structure and interpretation of their possible answers, and the mechanisms by means of which a declarative with a contrastive topic can be associated with a multiple constituent question, both in English and Hungarian. Finally, we consider some empirical and technical problems with the general assumption that the global question dominating a declarative with a contrastive topic can always be determined on the basis of the principles proposed in the literature. In Section 4 we turn to an alternative way of formulating the presuppositions introduced by contrastive topics, and in Section 4 we analyse the source of a second type of contrast introduced by contrastive topics, which relates to the interpretation of the focus within the same sentence. Section 5 summarizes the results of the chapter.

2 Contrastive topics in answers

2.1 Question–answer congruence in German and English: Rooth (1985, 1992) and Büring (1997)

Büring (1997) observes that there are question⁴⁹–answer sequences in English that can only be considered well-formed if the answer contains a contrastive topic,⁵⁰ that is, a constituent pronounced with what Bolinger (1965) calls B-accent (fall-rise pitch accent, cf. Chapter 1). The case is illustrated in (1) below, where (1B) differs from (1B') only in that the subject pronoun is pronounced with a B-accent in it. The focused object noun phrase common to the two sentences is pronounced with what Bolinger calls an A-accent (falling pitch accent).

- (1) A: Which book would Fritz buy?
 B: Well, [I]_{CT} would buy [The Hotel New HAMPshire]_F.
 B':#Well, I would buy [The Hotel New HAMPshire]_F.
 (Büring 1997: 66, labeling as in Büring 2003)

It is easy to see that the discourse constituted by the pair (1A)–(1B') is ill-formed, since (1B') answers a question completely different from (1A). What is surprising, however, is that, although the truth-conditional meaning of the (1B) sentence does not differ from that of (1B'), the former still can form a felicitous exchange with (1A), which must then be due to the contrastive intonation. (2) illustrates a German example of the same kind. The (2B) answer is pronounced with a so-called *hat contour* (Féry 1993), which consists of a sequence of a rising pitch accent, phonologically, a sequence of a L(ow) tone and a H(igh) tone with prominence on

⁴⁹ Whenever it is not bound to lead to confusion, we will sloppily use the expression *question* to refer to both the form *interrogative sentence* and to the meaning of these sentences, as many other authors do in the literature.

⁵⁰ Büring (1997) actually refers to these constituents as *Topics*. Given that in his later, 2003 work he also adopts the more traditional terminology, and refers to the relevant constituents as *contrastive topics*, I will use the latter term in the course of presenting his earlier work (including his examples), in order to avoid confusion.

- b. $\llbracket \text{John introduced Bill to [Sue]}_F \rrbracket^f =$ the set of propositions of the form
 “John introduced Bill to z ”
 (Rooth 1996: 277)

As (4b) shows, the focus semantic value of a sentence is a set of propositions, the elements of which depend crucially on where the focus is situated within the sentence.

Rooth (1992) specifies a constraint on question-answer congruence, which is based on focus semantic values and on Hamblin’s (1973) semantic theory for questions.⁵³ According to him, the ordinary semantic value of a question should be a subset of the focus semantic value of a corresponding answer (Rooth 1992: 85).⁵⁴ This condition predicts that, as opposed to (3A), (5a) does not provide an appropriate answer to (3Q): the set of propositions constituting the latter’s focus semantic value, shown in (5b), cannot be a superset of the set of propositions constituting the ordinary semantic value of (3Q), which are of the form “John introduced Bill to x ”:

- (5) a. John introduced $[\text{Bill}]_F$ to Sue.
 b. $\llbracket \text{John introduced [Bill]}_F \text{ to Sue} \rrbracket^f =$ the set of propositions of the form
 “John introduced x to Sue”
 (Rooth 1996: 277)

If we now return to Büring’s (1997) examples cited in (1) above, we find that the sequence (1A–B), which appears to constitute a well-formed discourse, does not count as a felicitous question–answer pair on the latter approach, in spite of the fact that it is felt to be a perfectly natural exchange by any native speaker of the language. For example, the focus value of (1B) consists of propositions of the form ‘I would buy y ’, whereas the alternatives introduced by the question are of the form ‘Fritz would buy y ’.

Büring (1997) proposes a theory that can account for such, intuitively well-formed question-answer sequences by means of introducing a third semantic/pragmatic value he refers to as the *CT-value*.⁵⁵ According to his theory, CT-values are ‘typed-up’ focus values, and they are generated for any expression α by taking the latter’s focus semantic value, $\llbracket \alpha \rrbracket^f$, and forming a set whose elements include $\llbracket \alpha \rrbracket^f$ and the sets that can be generated from the elements of $\llbracket \alpha \rrbracket^f$ by replacing the denotation of the contrastive topic in them with different alternatives. The CT-value of sentences consists of sets of sets of propositions. Naturally, whenever an expression α does not contain a contrastive topic as one of its subconstituents, the CT-value of the latter is identical to the unit set whose only

⁵³ According to Hamblin (1973), the (ordinary) semantic value of a question is identical to the set of its potential answers (both true and false ones).

⁵⁴ The reason why Rooth requires the ordinary semantic value of a question to be a subset of the focus semantic value of the answer is that he assumes that the range of possible answers to a question is contextually restricted.

⁵⁵ Büring (1997) actually uses the term *Topic value*. *CT-value* is the expression Büring (2003) uses for the same concept, which we adopt here to make our terminology more coherent.

element is $\llbracket \alpha \rrbracket^f$. (7) below illustrates the CT-value of (1B), (6) shows the focus semantic value of the sentence for comparison:

(6) $\llbracket (1B) \rrbracket^f = \{ \text{I would buy } \textit{War and Peace}, \text{ I would buy } \textit{The Hotel New Hampshire}, \text{ I would buy } \textit{The World According to Garp}, \dots \}$
(Büring 1997: 67)

(7) $\llbracket (1B) \rrbracket^{ct} = \{ \{ \text{I would buy } \textit{War and Peace}, \text{ I would buy } \textit{The Hotel New Hampshire}, \text{ I would buy } \textit{The World According to Garp}, \dots \}, \{ \text{Rufus would buy } \textit{War and Peace}, \text{ Rufus would buy } \textit{The Hotel New Hampshire}, \text{ Rufus would buy } \textit{The World According to Garp}, \dots \}, \{ \text{Fritz would buy } \textit{War and Peace}, \text{ Fritz would buy } \textit{The Hotel New Hampshire}, \text{ Fritz would buy } \textit{The World According to Garp}, \dots \}, \{ \text{Fritz's brother would buy } \textit{War and Peace}, \text{ Fritz's brother would buy } \textit{The Hotel New Hampshire}, \text{ Fritz's brother would buy } \textit{The World According to Garp}, \dots \}, \dots \}$
(Büring 1997: 67)

The sets of propositions constituting the elements of the set in (7) correspond to the ordinary semantic values of the questions in the following set:

(8) $\{ \text{which book would you/I buy, which book would Rufus buy, which book would Fritz buy, which book would Fritz's brother buy, } \dots \}$

The condition Büring (1997) proposes for capturing when question-answer sequences (including those sequences where the answer contains a contrastive topic) should be considered felicitous makes use of the third semantic/pragmatic value defined above:

(9) The meaning of the question Q must match one element in the CT-value of the answer A. (Formally: $\llbracket Q \rrbracket^o \in \llbracket A \rrbracket^{ct}$)
(Büring 1997: 67, terminology changed to accord with Büring 2003)

According to Büring, the above condition expresses that a declarative with a contrastive topic presupposes that it is used as an answer to a question that is an element of its CT-value. The exchange in (1A–B) does meet the above condition, since the ordinary semantic value of (1A) is an element of the CT-value of (1B), illustrated in (7) above.

Kadmon (2001), however, calls the claim into question that the above proposal correctly captures when declaratives containing contrastive topics are felicitous in the discourse, by considering the following set of data:

(10) a. $[\text{Larry}]_{CT}$ kissed $[\text{Nina}]_F$.
b. Who did Larry kiss?

c. Who kissed who?

(Kadmon 2001: 387, labeling of brackets changed to follow Büring 2003)

According to Kadmon, although Büring's theory says that (10a) presupposes that it is answering some question of the form *Who did d kiss?*, where *d* stands for an individual in the universe of discourse, the presupposition of (10a) is in fact more specific than that: (10a) actually presupposes that among questions of the latter form it is answering the one in (10b). She argues, furthermore, that (10a) should additionally be assumed to presuppose that it is answering (10c) as well, which is not predicted by Büring (1997), since (10c) is not an element of the CT-value associated with (10a).

I believe that the latter remarks by Kadmon are based on the observation that Büring's proposal fails to make a distinction between sequences of a question and an answer contain a contrastive topic where the answer is relevant to the question and sequences where the answer has a more intimate connection to a question, due to the fact that it provides exactly the information the question asks about. The latter relation between a question and an answer can be captured by the concept of *congruent answer*, proposed by Stechow (1991). According to this, a declarative is a congruent answer to a question if the set of alternatives determined by the former (e.g. the set constituting its focus semantic value according to Rooth 1985) is equivalent to the set of alternatives determined by the latter (e.g. the set of its answers according to Hamblin's 1973 theory). Although (9) captures the fact that (10a) can legitimately follow any question of the form *Who did d kiss?* in a discourse, it does not account for the one that the expected case is when *d* is equivalent to *Larry*, all other instantiations of *d* create a special effect.

In the next section we take a look at the solution proposed by Kadmon (2001) with the aim of avoiding the latter problems.

2.2 Contrastive topics and the questions they answer: Kadmon (2001)

Kadmon (2001) proposes that declaratives containing contrastive topics presuppose that they are answering two types of questions in the discourse at the same time. These questions can be generated with the help of a procedure that is based on the assumptions made by Roberts (1996) about the organization of discourses, which we will briefly review first.

Roberts' (1996) theory, which is based on ideas due to Wittgenstein and Carlson (1983), assumes that the goal of discourses is to discover and share with other interlocutors information about our world. These goals are achieved by asking and answering questions. Efficient information exchange requires that questions be answered as soon after they are asked as possible. Roberts assumes that *Relevance* (in the sense of Sperber and Wilson 1986) is an organizing principle of discourses, which ensures the achievement of the above goals, i.e. guarantees coherence and facilitates the processing and storage of information.

Roberts assumes that information is organized in the discourse in relation to questions being addressed. The *Principle of Relevance* requires that each move (i.e. a question or an answer) be relevant to the preceding discourse, i.e. contribute to

the aim of answering the questions under discussion. A declarative is relevant to a question if it constitutes a partial or a complete answer to it.⁵⁶ A question, however, is relevant to another question if it is part of a strategy to answer it, i.e. constitutes a subquestion of it. Questions that have already been asked but have not yet been answered at a particular point in the discourse constitute the ordered set of *Questions Under Discussion (QUD)*. When a question is accepted by the interlocutors, it is placed on top of the *QUD stack*. The strategy for answering the questions under discussion always involves answering the one on top of the stack. Each move *m* can therefore be uniquely associated with a question that constitutes the last *QUD* at the time *m* is made.

Kadmon (2001) assumes, in addition, that not only declaratives but also questions can have a focus semantic value if there is a focus expression in them (in addition to the interrogative expression), and this focus semantic value is generated by replacing in the question denotation the denotation of the focused constituent with a variable, and interpreting the resulting formula with respect to all assignment functions that differ only in the value they assign to this variable. She proves her claim that (10a) presupposes that it is answering (10b) by showing that (10b) is equivalent to the last question under discussion for (10a), which follows from the combination of the presuppositions introduced by the contrastive topic⁵⁷ and by the focus of the latter declarative, which we will outline below.

According to Kadmon, an utterance with a contrastive topic presupposes that its CT-value⁵⁸ is identical to the focus semantic value of its last *QUD*. For an illustration, consider (10a) again, repeated as (11a), its CT-value represented in an abstract form in (11b), which corresponds to the set of sets of propositions listed in (11c):

- (11) a. [Larry]_{CT} kissed [Nina]_F.
 b. $\{ \{ [\text{kiss}(x, y)]^g : g \text{ is identical to } g \text{ except that it may assign a different value to } y \} : g \text{ assignment} \}$
 c. $\{ \{ \text{'Larry kissed Sue,' 'Larry kissed Mary,' 'Larry kissed Lisa,' ... } , \{ \text{'Bill kissed Sue,' 'Bill kissed Mary,' 'Bill kissed Lisa,' ... } \} , \{ \text{'John kissed Sue,' 'John kissed Mary,' 'John kissed Lisa,' ... } \} , \dots \}$
 (Kadmon 2001: 391, terminology changed to follow Büring 2003)

According to the latter proposal, the contrastive topic of (11a) gives rise to the presupposition that the focus semantic value of its last *QUD* is identical to (11c). This amounts to two things. On the one hand, it means that the ordinary semantic value of the last *QUD* for (11a) must be an element of the set (11c), which is equivalent to what Büring's (1997) theory would also predict. On the other hand,

⁵⁶ According to Roberts (1996), a partial answer contextually entails the evaluation of, that is, the assignment of the values *true* or *false* to, at least one element in the set of propositions corresponding to the question, whereas a complete answer contextually entails the evaluation of all of them.

⁵⁷ In Kadmon's (2001) original terminology, these constituents are referred to as *TOPIC-foci*.

⁵⁸ In Kadmon's (2001) terminology: *topic value*.

however, it also means that the subject noun phrase in the last *QUD* for (11a) must be focused, which is not predicted by Büring.

In accounting for the presuppositions of the focus of (10a) (= (11a)), Kadmon relies on a proposal by Roberts (1996) (which in turn builds on proposals by Rooth 1985 and von Stechow 1991), which says the following: “any utterance B presupposes that the last question under discussion ... denotes precisely that set of propositions which constitutes the focus semantic value of B” (Kadmon 2001: 344). According to the latter definition, the ordinary semantic value of the last question under discussion for (11a) must correspond to the focus semantic value of (11a), shown in (12):

- (12) { ‘Larry kissed Sue’, ‘Larry kissed Mary’, ‘Larry kissed Lisa’, ... }

This means that the ordinary semantic value of the last *QUD* for (11a) must be identical to the ordinary semantic value of the question in (13a):

- (13) a. Who did Larry kiss?
b. Who did [Larry]_F kiss?

Although the most obvious suggestion would be to say that the last *QUD* of (11a) is equivalent to (13a) itself, the latter question does not satisfy the second part of the presupposition introduced by the contrastive topic of (11a), namely, that in the last *QUD* for this sentence, the subject noun phrase must be focused. The variant of (13a) that satisfies the latter requirement is shown in (13b) above. It is easy to see that (13b) has all the properties that the last *QUD* for (11a) has to possess according to the presuppositions introduced by its focus and by its contrastive topic: its ordinary semantic value is equivalent to the set in (12) and is an element of the set in (11c), and its focus semantic value is equivalent to the set in (11c). This constitutes Kadmon’s solution for the first puzzle left without discussion in Büring (1997), that is why (10a) (= (11a)), presupposes that it is answering (10b) (= (13a)), or, more precisely, its variant with a focused subject noun phrase in (13b).⁵⁹

Let us now consider Kadmon’s proposal for solving the second puzzle, the one that concerns why (10a), repeated again as (14a), presupposes that it is answering the multiple constituent question in (10c), repeated as (14b):

- (14) a. [Larry]_{CT} kissed [Nina]_F.
b. Who kissed who?

The solution is based on the assumption that the focus and the contrastive topic are means of recording the structure of the discourse up to the sentence in which they

⁵⁹

The fact that (11a) can overtly be preceded, in addition to (13b), also by (i), for example, is accounted for in Kadmon’s theory by saying that a move from a question like (13b) to (i) is allowed because the ordinary denotations of these questions are both elements of the set constituting the CT-value of their answers:

(i) Who did [Bill]_F kiss?

appear. The focus of a sentence records the structure of the question preceding it, whereas the contrastive topic records the last two moves in the discourse. Thus, as Kadmon (2001: 397) argues, the structure of (14a) records that the two moves preceding it are (15b) and (15a):

- (15) a. For each individual, who did that individual kiss?
 b. Who did [Larry]_F kiss?

(Kadmon 2001: 397)

Given that the first half of this section was concerned with the question of why (15b) is appropriate as the last *QUD* for (14a), here we only have to look at why (15a) should be the last *QUD* for (15b) and why this is to be considered identical to (14b). It was mentioned above that in Roberts's (1996) theory, the last *QUD* for any sentence in a discourse should have an ordinary semantic value that corresponds to the focus semantic value of the latter sentence itself. (16a)=(11b) represents the focus semantic value of (15b) in an abstract form, and (16b)=(11c) in the form of a set of sets of propositions:

- (16) a. $\{ \{ [\text{kiss}(x, y)]^g : g \text{ is identical to } g \text{ except that it may assign a different value to } y \} : g \text{ assignment} \}$
 b. $\{ \{ \text{'Larry kissed Sue'}, \text{'Larry kissed Mary'}, \text{'Larry kissed Lisa'}, \dots \}, \{ \text{'Bill kissed Sue'}, \text{'Bill kissed Mary'}, \text{'Bill kissed Lisa'}, \dots \}, \{ \text{'John kissed Sue'}, \text{'John kissed Mary'}, \text{'John kissed Lisa'}, \dots \}, \dots \}$

Thus, the last *QUD* for (15b) has to be a question whose ordinary semantic value is of the same type as the focus semantic value of (15b) itself, that is, a set of sets of propositions. Kadmon argues that (15a) is a question of the latter type, since it is equivalent to a set of questions, exactly to the one shown in (16a, b). Although she does not discuss how the questions that are equivalent to a set of questions can be recognized, one can assume, following Krifka (2001b), that a question would be equivalent to a set of questions if each complete congruent answer to the former was equivalent to the conjunction of complete congruent answers to the latter. It is easy to see that the question *For each individual, who did that individual kiss?* stands in the required relation to the set of questions of the form *Who did y kiss?*, for all possible values of *y*.

According to Kadmon, on one of its possible interpretations (referred to as the matching question reading in the literature, to be discussed below), (14b), repeated here as (17a), is equivalent to the interpretation of (15a), and this is the reason why (14a) presupposes that it is answering (17a) (on its relevant reading). (The other possible reading of (17a), which asks simultaneously about several participants of a single situation, is referred to as a *conjoined question* in the literature, to be discussed below.) Although (17a–c) constitute a felicitous discourse in the order indicated, (17a) can also be directly followed by (17c), which shows that moves in a discourse do not always have to be explicit, but can be implicit as well:

- (17) a. Who kissed who?
 b. Well, who did [_F Larry] kiss?
 c. [_{CT} Larry] kissed [_F Nina].

This concludes our review of Kadmon's account of the second puzzle. As the preceding discussion has shown, Kadmon's (2001) theory is based on the assumption that each declarative with a contrastive topic can be associated with two questions. One of these is the question whose focus semantic value is identical to the CT-value of the declarative (assuming that questions can also have focus semantic values), and whose ordinary semantic value is identical to the focus semantic value of the declarative. (This is the question to which the declarative provides a congruent answer to according to Stechow 1991.) The other question is equivalent to a set of questions (which the question defined above is an element of as well), which the declarative gives a partial answer to.

Let us consider whether the method proposed by Kadmon (2001) for identifying the questions evoked by an English declarative sentence containing a contrastive topic are applicable to the relevant Hungarian constructions as well. Consider (18a), a Hungarian declarative sentence with a contrastive topic, which is followed by a pitch-accented constituent in [_{Spec}, FP] position, the canonical position for a constituent that provides an answer to a constituent question. (18b, c) show the two most natural ways of expressing the meaning of the question to which (18a) provides a congruent answer:

- (18) a. /PEti [_{FP} \MARit csókolta meg.]
 Pete Mary.ACC kissed VM
 'As for Pete, he kissed \MARY.'
- b. [_{FP} \KIT csókolt meg Peti?]
 who.ACC kissed VM Pete
 'Who did Pete kiss?'
- c. [_{TopP} Peti [_{FP} \KIT csókolt meg?]]
 Pete who.ACC kissed VM
 'Who did Pete kiss?'

In (18b), the constituent *Peti* appears unstressed in postverbal position, whereas in (18c) it is situated sentence-initially and preferably pronounced without a pitch accent.

The set constituting the CT-value of (18a) is shown in (19):

- (19) {{ 'Pete kissed Mary', 'Pete kissed Sue', 'Pete kissed Lisa', ... }, { 'John kissed Mary', 'John kissed Sue', 'John kissed Lisa', ... }, { 'Steve kissed Mary', 'Steve kissed Sue', 'Steve kissed Lisa', ... } }

If Kadmon's predictions were valid for Hungarian, the focus semantic value associated with the questions in (18b, c) would have to be identical to the set in (19). However, since these questions do not contain any focus other than the interrogative constituent,⁶⁰ their focus semantic value is equivalent to the following unit set, which contains only one element of the set in (19):

- (20) {{ 'Pete kissed Mary', 'Pete kissed Sue', 'Pete kissed Lisa', ... }}

The stress patterns indicated in (18b, c) are not the only ones that can characterize the pronunciation of these questions. Below we look at the question whether their prosody could be altered in a way that could give rise to interpretations of the kind Kadmon postulates for the *QUDs* of declaratives containing contrastive topics. First, the postverbal subject proper noun *Peti* in (18b) can be pronounced with a falling pitch accent, as illustrated in (21):

- (21) [FP \KIT csókolt meg \PEti?]
 who.ACC kissed VM Pete
 'Who did \PEte kiss?'

If postverbal accented constituents are to be considered foci, as proposed by É. Kiss (1998b), who gives the latter the name *information foci*, to distinguish them from constituents in [Spec, FP], which she refers to as *identificational foci*, then a discourse where (21) precedes (18a) would satisfy the requirements of contexts where contrastive topics legitimately appear according to Kadmon. The sequence constituted by (21)–(18a) is, however, by no means more natural than those constituted by (18b)–(18a) or (18c)–(18a). Additionally, it is not completely clear whether postverbal pitch accented constituents should really be considered prototypical foci: they cannot appear in canonical answers to singular constituent questions (contrary to claims by É. Kiss 1998b, cf. e.g. Szendrői 2003), and they cannot be used to express a contrast to an alternative of the pitch-accented constituent, therefore it is questionable whether they give rise to focus semantic values at all. (É. Kiss 1998b seems to suggest the same.⁶¹)

Second, (18c) has a prosodically well-formed variant where the proper noun identical to the contrastive topic of (18a) bears a falling pitch accent, in fact the only pitch accent of the sentence, giving the latter constituent the appearance of focus:

⁶⁰ Interrogative phrases must occupy the [Spec, FP] position in Hungarian (with the exception of the interrogative word *miért* 'why') which is normally assumed not to be iterable, cf. É. Kiss (2002).

⁶¹ For example, É. Kiss (2002: 249) makes the following claim about postverbal informational foci: "...a postverbal focus ... does not present the referent of the focused DP as a member of a set of alternative entities, and it does not express exhaustive identification among the members of such a set." (Given the claim made by Krifka 2008, according to which focusing involves the presence of alternatives, É. Kiss's information focus does not seem to qualify for its name.)

- (22) \PEti [FP kit csókolt meg?]
 Pete who.ACC kissed VM
 '(But) who did \PEte kiss?'

If the sentence-initial proper name *Peti* was considered the focus of (22), the latter sentence would have a focus semantic value that is equivalent to (19), and therefore would be predicted by Kadmon's theory to be the last question under discussion for (18a).⁶² Unfortunately, these expectations are not confirmed by the data: the only situation in which (22) can be used for asking for the information expressed in (18a) is when it corrects a previous question (i.e. one with a different subject) at the same time.

The variant of (18c) in which the sentence-initial constituent is pronounced with the contrastive rising pitch accent, shown in (23), forms a coherent question-answer pair with (18a). Given that Kadmon does not mention any questions serving as *QUDs* for declaratives containing contrastive topics that contain contrastive topics themselves, we cannot judge whether this fact would be predicted by her theory:

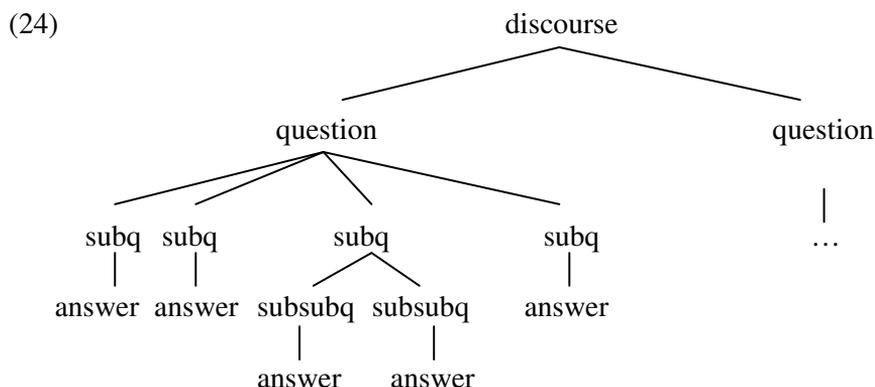
- (23) /PEti [FP \KIT csókolt meg?]
 Pete who.ACC kissed VM
 'Who did Pete kiss?'

Summing up, the Hungarian data reviewed above indicate that the otherwise very attractive method proposed by Kadmon (2001) for predicting the form of the last question under discussion for an English declarative that contains a contrastive topic cannot be transferred to Hungarian. The next section will look at another theory aiming to predict what questions declarative sentences with contrastive topics can provide answers to.

2.3 Discourse trees and strategies: Büring (2003)

Büring (2003) aims to characterize the conditions regulating the appearance of contrastive topics in a discourse with the same formal precision as found in the recent literature on focus, for which he uses a hierarchical model of discourse structure, based on Klein and von Stutterheim (1987), van Kuppevelt (1991, 1995, 1996) and Roberts (1996). An important ingredient to the model is the notion of *strategy*, which is defined as consisting of a question and the subquestions belonging to it. The notational device he uses to represent the hierarchical structure of discourses (e.g. question-answer or question-subquestion relations) is called *d*(iscourse)-tree, an example of which is shown in (24) below:

⁶² Note that (22), which is a grammatical sentence in Hungarian, constitutes a serious problem for É. Kiss's (2002) theory about the structure of the Hungarian sentence, since this theory would have to postulate that the subject noun phrase *Peti* is situated in (the unique) [Spec, FP] position of the sentence, which, however, is also the only position that the interrogative expression *kit* can occupy.



(Büring 2003: 516)

Büring (2004: 516) assumes that a sequence of utterances (that contain CT/F marking) is a well-formed discourse only if these utterances can map onto the moves in some d-tree, preserving linear order. The two important constraints well-formed d-trees have to satisfy include the constraint of *Informativity*, which means ‘Don’t say known things, don’t ask for known things!’, and that of *Relevance*, which means ‘Stick to a question until it is sufficiently resolved!’ (Büring 2003: 517). He proposes that for a move to be relevant, it must answer or at least address the question under discussion for it, i.e. the question immediately dominating the move in the d-tree.⁶³ Büring claims that the presence of a contrastive topic in a declarative sentence indicates or presupposes a strategy. Informally, this claim is to be understood as saying that there is a question in the discourse to which the declarative containing the contrastive topic does not provide a complete answer.⁶⁴

In this theory, the particular strategy presupposed by a declarative containing a contrastive topic is determined on the basis of which constituent plays the role of the contrastive topic (marked with the B-accent) and which one the role of the focus (marked with the A-accent). Büring claims that the question immediately dominating the node a declarative with a contrastive topic is mapped onto and the former’s sister-questions in any d-tree are drawn from the set of questions constituting the CT-value of the declarative. As an illustration, consider the declarative in (25), and the algorithm for CT-value formation shown in (26):

(25) FRED_{CT} ate the BEANS_F.

(Büring 2003: 519)

⁶³ For the sake of simplicity, Büring (2003) disregards discourses where declaratives are preceded by declaratives.

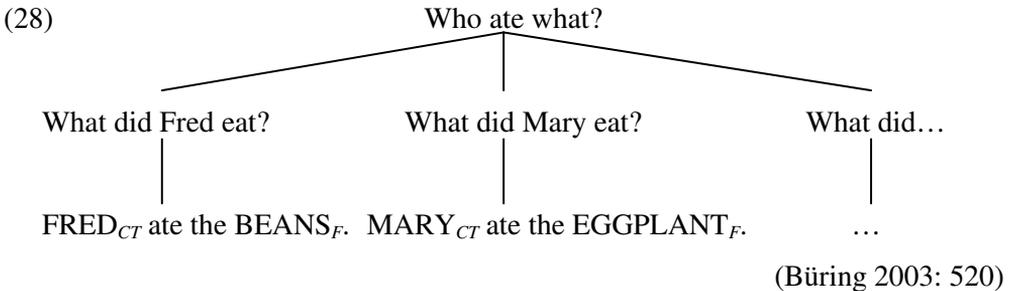
⁶⁴ The idea that contrastive topicalization indicates the presence of some unanswered questions in the discourse that are related to the one answered by the declarative containing the contrastive topic was claimed first for Hungarian in Szabolcsi (1981a), as mentioned in Chapter 1.

- (26) CT-value formation:
 step 1: Replace the focus with a *wh*-word and front the latter, if focus marks the finite verb or negation, front the finite verb instead.
 step 2: Form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it.
 (Büring 2003: 519)

(27a) shows the application of the above algorithm to (25), and (27b) provides a characterization of the CT-value of (25) in terms of a set of sets of propositions:

- (27) a. CT-value formation:
 step 1: What did Fred eat?
 step 2: What did Fred eat?
 What did Mary eat?
 What did ... eat?
 b. $[[\text{FRED}_{CT} \text{ at the BEANS}_F]]^{ct} = \{ \{x \text{ ate } y \mid y \in D_e \} \mid x \in D_e \}$
 (Büring 2003: 519)

The theory predicts that (25) should be able to occur in a strategy where the subquestions are elements of the set of questions corresponding to the set of sets of propositions in (27b). The d-tree in (28) depicts the structure of a corresponding discourse of the relevant kind:



The reason why (25) has to be dominated by the question *What did Fred eat?* and not by any other one in the list in (27) follows (i) from the tacit assumption that one and the same sentence cannot be mapped onto two different moves of the same discourse tree, and (ii) from the *principle of highest attachment* (Büring 2003: 534), according to which, if M is a complete answer to a question Q, Q immediately dominates M in an appropriate d-tree. As (25) is a complete answer to the question *What did Fred eat?*, the former must be dominated by the latter in the discourse tree, but, as a result, (25) cannot be immediately dominated by any other question in the same discourse tree.

Naturally, whenever the A- and B-accents are moved onto other constituents within the sentence, this also alters the CT-value, as well as the assumed presuppositions associated with the sentence. (29) below illustrates a variant of

(25) where the F- and CT-markings have been swapped, (29a) shows a list of questions constituting the latter's CT-value, whereas (30) is a d-tree representing the structure of a discourse where the latter sentence could appear.

(29) FRED_F ate the BEANS_{CT}.

a. CT-value formation:

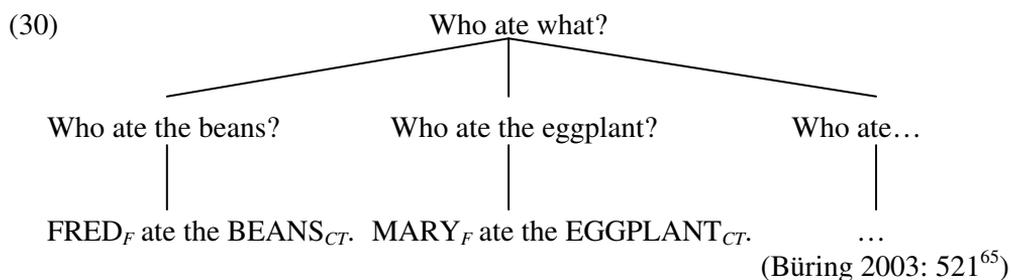
step 1: Who ate the beans?

step 2: Who ate the beans?

Who ate the eggplant?

Who ate ...?

(Büring 2003: 520)



Büring (2003) claims that the subquestions in d-trees are allowed to remain implicit in actual discourses, which explains why a discourse consisting of (31a–b) can also be well-formed:

(31) a. Who ate what?

b. FRED_{CT} ate the BEANS_F.

Büring does not offer an algorithm similar to the one in (26) for generating, for a particular declarative containing a contrastive topic, the root question dominating the latter in a d-tree, only the following definition specifying how a question can be relevant to another question (which, according to Büring, indirectly provides a definition of sub-question) offers a step in the relevant direction:

(32) [A] question Q is relevant in a d-tree DT iff at least one answer to Q is an answer to the QUD for Q in DT.

(Büring 2003: 518)

Given the definition in (32), and the fact that, according to Büring, “A is an answer to Q if A shifts the probabilistic weights among the propositions denoted by Q” (p. 517), it is not required by the theory that a declarative like (31b) above be dominated by a multiple constituent question like (31a) in any possible d-tree. In

⁶⁵ (24), (28) and (30) are reproduced here with the permission of the author.

this theory, a d-tree in which a question of the type *What did Fred and Mary eat?* dominates the question *What did Fred eat?*, which in turn dominates the declarative (31b), counts as a perfectly well-formed one.⁶⁶

Kadmon's (2001) and Büring's (2003) theories share the assumption that many types of declaratives containing contrastive topics are viewed as either explicitly or implicitly answering multiple constituent questions (by providing at least a partial answer to them). The next two sections will investigate the relation between declaratives containing contrastive topics and these multiple constituent questions.

Naturally, not all types of declaratives containing contrastive topics can be viewed as partial answers to multiple constituent questions. The two significant exceptions, which Büring (1997) and (2003) both elaborate on at length, are declaratives where the contrastive topic is followed by a pitch-accented negative particle or by a verb (on a *verum focus* reading), illustrated in (33b, c), which provide partial answers to singular constituent questions, like (33a):

- (33) a. [_{FP} Ki érkezett meg?]
 who arrived VM
 'Who arrived?'
 b. /János \MEGérkezett.
 John VM.arrived
 'As for John, he did arrive.'
 c. /János \NEM érkezett meg.
 John not arrived VM
 'As for John, he didn't arrive.'

The interpretation of discourses like (33a)–(33b) and (33a)–(33c) will be discussed in Chapter 3.

2.4 Contrastive topics versus multiple foci

Given the well-known assumption that the accented part of a declarative corresponds to the *wh*-part of the corresponding question, and the observation made by several authors in the literature, according to which many types of declaratives where contrastive topics are followed by a focus provide felicitous (partial) answers to multiple constituent questions, the question arises whether the declaratives described above can be distinguished from those that contain multiple foci.

⁶⁶ One further example, provided by Büring (2003) himself is that there is a well-formed d-tree where the node corresponding to (iA) below is rooted in the node corresponding to the singular constituent interrogative in (iQ):

(i) Q: What did the pop stars wear?
 A: The FEMALE_{CT} pop stars wore CAFTANS_F.

According to Comorovski (1996), multiple constituent questions like (34) can expect two types of answers, consisting either of a single pair or a list of pairs.

(34) Who shot whom?

Comorovski refers to the former reading of the question as the *conjoined question* reading, and to the latter as the *matching question* reading. Büring (1997) argues that two slightly different phonetic realizations of the same declarative can provide different (complete vs. partial) answers to the two readings of multiple constituent questions like (34). The complete answer to the single pair reading of the question contains multiple foci, illustrated in (35a), the partial answer to the pair-list reading contains a contrastive topic followed by a focus, as in (35b):

- (35) a. [PEter]_F hat [BILL]_F erschossen.
 Peter has Bill shot
 ‘Peter shot Bill.’
- b. [PEter]_{CT} hat [BILL]_F erschossen.
 Peter has Bill shot
 ‘Peter shot Bill.’

(Büring 1997: 59, labeling changed to follow Büring 2003)

Büring claims that although both (35a, b) can be realized phonetically with a rise followed by a fall (referred to as a ‘hat contour’ by Féry 1993), the shift in pitch characterizing the former is smaller than the shift associated with the latter, and this is to be attributed to the completely different phonological constitution of the two intonation patterns. Büring argues that whenever (35a) is pronounced with a rise-fall melody, it is an instantiation of the contour Féry describes as the *hat contour 1*, “a sequence of two completely linked pitch accents, the first of which is a high prenuclear pitch accent (H*) which is derived from an underlying H*L”, followed by a falling nuclear tone (H*L) (Féry 1993: 149). In this case, the rise has no phonological basis, it is only a phonetic fact of German that “pre-nuclear secondary focus accents [...] occur with rising tones” in this language (Féry 1993: 149). (35a) can, however, also be pronounced in a manner that makes its information structure more apparent, that is, as a sequence of two intermediate phrases, each with a falling nuclear tone. As Féry (1993: 150) remarks, however, “the realization of a sentence with a prenuclear monotonal accent is more natural in a context where no emphasis is needed, and even adds to the cohesion of the text.”

According to Büring (1997), (35b) is realized with what Féry (1993) describes as the *hat contour 2*, consisting of two intermediate phrases, one bearing a L*H and the other a H*L contour. In this hat contour, the contrast between the rise and fall is phonological.

Jacobs (1997) also argues for distinguishing between those answers to multiple constituent questions that contain multiple foci and those that contain an *I(ntonational)-topic* (Jacobs’ term for constituents that have been referred to as

- b. [_{FP} Ki lött le [_{FP} kit?]]
 who shot VM who.ACC
 ‘Who shot whom?’

Having shown that in German and Hungarian, declaratives containing multiple foci versus a contrastive topic followed by a focus can be distinguished from each other formally, we now turn to the questions of how, given a declarative with a contrastive topic, the multiple constituent questions it provides an answer to can be generated.

2.5 Contrastive topics in answers to multiple constituent questions

As discussed in section 2.3 above, Büring (2003) claims that declaratives containing a contrastive topic and a focus in English are related to two contextually given questions, which form a question-subquestion strategy. According to the theory, the subquestion immediately dominating a declarative with a contrastive topic is an element of the latter’s CT-value, whereas the root question is one that the questions in the latter CT-value are all subquestions of. Büring (2003) argues that both (23), repeated in (38a), and (27), repeated in (38b), can occur in a strategy dominated by (39), in other words, that both of them provide partial answers to (39):

- (38) a. FRED_{CT} ate the BEANS_F.
 b. FRED_F ate the BEANS_{CT}.

- (39) Who ate what?

According to Büring, the question in (39) can be answered in two ways, by considering the relevant persons one by one, and providing for each of them what they ate, or by considering the relevant types of food, and providing for each of them the person(s) who ate them. Some previous studies, including Kadmon (2001) and Kuno (1982), also advocate the view that (39) is to be considered ambiguous in the manner described above, although the latter observes that there are marked and unmarked options for answering a particular multiple *wh*-question in English.

Comorovski (1996) and Krifka (2001a) defend a different view, however. They argue that there is always only one way of answering a multiple constituent question that expects a list answer, i.e. a matching question, which is due to certain asymmetries in the semantic behaviour of the two (or more) interrogative expressions in such questions, discussed in Comorovski (1996). First, one of the question words, usually the first one, should be linked to a contextually given set (cf. Comorovski 1996), i.e. be D-linked.⁶⁸ Second, the roles of the interrogative

⁶⁸ “A *wh*-phrase is D-linked if the discourse participants can exhaustively partition the set denoted by the *wh* quantifier in an identical way by a shared selection criterion.” (Comorovski 1996: 12) (Note that the term D-linking originates from Pesetsky 1987). É. Kiss (1993) captures essentially the same regularity by claiming that one of the *wh*-expressions must be *specific*: “An operator is specific if it quantifies over a set which the speaker and listener can partition exhaustively in an identical way.” (pp. 92–93)

(41a) would thus be an appropriate answer to (40a), whereas (41b) would be an appropriate answer to (40b). These answers are not interchangeable:

- (41) a. Mari [_{FP} a \KÖNYvet és a \LABdát], Peti [_{FP} a \LABdát],
 Mary the book.ACC and the ball.ACC Pete the ball.ACC
 Tamás [_{FP} az \Autót választotta.]
 Thomas the car.ACC chose
 ‘Mary chose the book and the ball, Pete chose the ball, and Thomas chose the car.’
- b. A könyvet [_{FP} \MAri], a labdát [_{FP} \MAri és \PEti],
 the book.ACC Mary the ball.ACC Mary and Pete
 az autót [_{FP} \TAmás választotta.]
 the car.ACC Thomas chose.
 ‘The book was chosen by Mary, the ball by Mary and Pete, and the car by Thomas.’

The multiple constituent questions are related to their congruent answers in the following way. The constituents in the answers that are supposed to correspond to the second interrogative expression in the question, situated in [Spec, FP], are also situated in [Spec, FP],⁷² and thus receive an exhaustive interpretation. The constituents in the answers corresponding to the first interrogative expression are situated in [Spec, TopP], and pronounced with the intonation characteristic of topics. Equally acceptable answers to the questions in (40a, b) are provided by the sentences below, where the constituents corresponding to the first interrogative expressions the relevant questions are pronounced with the contrastive topic intonation:

- (42) a. /MAri [_{FP} a \KÖNYvet és a \LABdát], /PEti
 Mary the book.ACC and the ball.ACC Pete
 [_{FP} a \LABdát], /TAmás [_{FP} az \Autót választotta]
 the ball.ACC Thomas the car.ACC chose
 ‘Mary chose the book and the ball, Pete chose the ball, and Thomas chose the car.’
- b. A /KÖNYvet [_{FP} \MAri], a /LABdát [_{FP} \MAri és \PEti],
 the book.ACC Mary the ball.ACC Mary and Pete
 az /Autót [_{FP} \TAmás választotta].
 the car.ACC Thomas chose
 ‘The book was chosen by Mary, the ball by Mary and Pete, and the car by Thomas.’

⁷² Surányi (2007) claims, however, that in embedded clauses WH can be dominated by universal quantifiers. Exceptions, as always, are the expressions that are excluded from the [Spec, FP] position.

The difference between (41a, b) versus (42a, b) as answers to (40a, b), respectively, is that whereas (41a, b) convey that Mary, Pete and Thomas versus the book, the ball and the car constitute the domain of the first *wh*-expressions in (40a) and (40b), respectively, no similar interpretational feature seems to be present in the case of (42a, b), that is, the latter are perfectly felicitous answers by themselves even if the set of relevant persons and presents includes many more than the denotations of the constituents with rising pitch accents in these sentences.

The above discussion thus shows that (40a, b) and their congruent answers satisfy the properties attributed by Comorovski (1996) to matching questions and their answers. Since the constituents of a declarative constituting a partial answer to a matching question that correspond to the different interrogative expressions occupy different syntactic positions, for a given a declarative with a contrastive topic and a focus, it is always possible to reconstruct the matching question it provides a partial answer to. On this strategy, the ill-formedness of particular declaratives with contrastive topics could be accounted for by saying that it is impossible to construct a matching question to which they would provide a congruent answer. For example, consider the contrast between (36a, b), repeated here as (43a, b):

- (43) a.*/János [_{DistP} \TÖBB, mint öt diákot meglátogatott.]
 John more than five student.ACC VM.visited
 ‘As for John, he visited more than \FIVE students.’
- b. /János [_{FP} \TÖBB, mint öt diákot látogatott meg.]
 John more than five student.ACC visited VM
 ‘As for John, he visited more than \FIVE students.’

Whereas (43b) is a legitimate partial answer to the matching question created by replacing its pitch-accented constituents with appropriate interrogative expressions, shown in (44), (43a) is not an acceptable answer to the same question, and it is in fact impossible to create any matching question that it would provide an acceptable partial answer to:

- (44) [_{DistP} Ki [_{FP} hány diákot látogatott meg?]]
 who how.many student.ACC visited VM
 ‘Who visited how many students?’

There is, however, a prosodic variant of (43a) that is acceptable in Hungarian, illustrated in (45):

- (45) /János [_{DistP} \TÖBB, mint öt diákot \MEglátogatott.]
 John more than five student.ACC VM.visited
 ‘As for John, he visited more than \FIVE students.’

With its predicate focus, the latter sentence is a congruent answer to a matching question of the form *Who did what?*, therefore, its well-formedness is correctly predicted. In the next section, we turn to the discussion of some problems with the general approach according to which contrastive topics presuppose a *strategy*.

2.6 Problems with the approach that contrastive topics presuppose a *strategy*

In spite of the fact that the intuition according to which declaratives containing a contrastive topic presuppose a strategy (i. e. that they provide a partial answer to a more comprehensive question than the one immediately dominating them in any well-formed d-tree) seems to be well-founded, there appear to be some difficulties with specifying the mechanism with the help of which the elements of the strategy for contrastive topics, in particular quantificational contrastive topics, are to be determined, which I would like to discuss in this section. Consider the following sentence, with a B-accent on the bare numeral determiner of the subject noun phrase:

- (46) /TWO dwarfs were fetching \BEER.
(Eckardt 2002, prosodic marking added)

According to Büring's (2003) theory, (46) has to presuppose a question-subquestion strategy, where the subquestion is an element of the CT-value of the declarative, and the main question is such that its complete answers are identical to the conjunction of complete answers to the questions in the CT-value. On the most obvious reading of the sentence, the rising accent on the determiner marks the determiner alone as being contrasted to its alternatives.⁷³ The falling pitch accent on *beer* could equally signal object focus or predicate focus, here we will assume the latter. If the set of alternatives to the denotation of the numeral are assumed to be equivalent to the denotations of all possible numerals, the CT-value of (46) is as follows:

- (47) CT-value of (46):
{What did one dwarf do?, What did two dwarfs do?, What did three dwarfs do?, ... }

The root question dominating the questions in the latter set would be identical, in Büring's theory, to a matching question asking for a list that specifies for each possible number the type of activity that was done by that number of dwarfs. Such a matching question could, for example, be expressed by (48), on the assumption that the interrogative expression *How many dwarfs* is D-linked. (49) illustrates a possible answer to (48) on the latter reading, which includes (46) as one of its conjuncts as well:⁷⁴

⁷³ Büring (1997: 62–63) defends the view that the 'contrastive topic feature' cannot project from a determiner to a DP. Rooth (2005: 306) also accepts this view.

⁷⁴ Eckardt (2002) refers to the reading of the contrastive topic of (46) on which it can appear in the list in (49) below as *denotational topic*, Umbach (2004) calls it the *unspecific* reading.

- (48) How many dwarfs did what?
- (49) /ONE dwarf was reading the \NEWSpaper, /TWO dwarfs were fetching \BEER, /THREE dwarfs \SLEPT, /FOUR dwarfs ...
(Eckardt 2002, prosodic marking added)

Eckardt (2002) claims that (46) has a different reading as well, on which it can legitimately occur as the third clause of a narrative consisting of the parts listed below:

- (50) a. The seven dwarfs were busy cooking dinner.
b. /THREE dwarfs were peeling \poTatoes,
c. /TWO dwarfs were fetching \BEER, and
d. /TWO dwarfs were roasting \SAUsages.
(Eckardt 2002, intonational marking added)

Eckardt (2002) argues that the contrastive topics that appear in the list in (50) belong to a different class than the ones in (49), and she calls them *referential topics*.⁷⁵ In the list of sentences illustrated in (50), each subject DP refers to a subset of the noun's denotation, that is, to a *witness set* of the DP. The set referents are assumed to be disjoint (this is the reason why the same contrastive topic can occur repeatedly in the list, e.g. as in (50c) and (50d)), and, ideally, they cover the universe of discourse. Eckardt (2002) claims that the conjunction of (50b–d) provides a complete congruent answer to the following question (assuming that the number of the dwarfs is seven):⁷⁶

- (51) What did the dwarfs do?⁷⁷

Let us consider what Büring's (2003) theory predicts about the structure of discourses where (50b–d) can appear on their second interpretation. According to the rule about CT-value formation cited in (27) above, the CT-value of (50c) would consist of a set of questions of the type *What did x dwarfs do?* The latter set, however, cannot have an element to which (50c) actually provides a congruent

⁷⁵ Umbach (2004) refers to the same reading of the contrastive topic as *specific*.

⁷⁶ She also argues that the sentences in the list in (50b–d) could together answer the question in (i):

(i) What did which dwarf do?

The latter claim, however, seems to be contradicted by É. Kiss (1993), Beck and Rullmann (1999), and Krifka (2001a), according to whom the above *which*-question would expect an answer that tells for each element of the set of dwarfs what it did. Given, however, that two dwarfs in (50c) cannot be assumed to uniquely identify a sum of two dwarfs, as seen above, the conjunction of (50b–d) cannot satisfy the requirements of being a complete congruent answer to (i) (although, of course, it would be a relevant response to it if the answerer lacked more specific information).

⁷⁷ According to Krifka's (1992) theory on the interpretation of questions with definite plural NPs, a congruent answer to the question in (51) would list the activities carried out by one or the other of the dwarfs, as illustrated in (i):

(i) The dwarfs were peeling potatoes, fetching beer and roasting sausages.

The conjunction of (50b–d) answers the question in (51) by dividing the group of dwarfs into subgroups and specifying for each of them separately what they did, therefore, it is more specific than what is expected by the question.

answer on the relevant interpretation. Let us assume, for the sake of argument, that there is a well-formed d-tree where the element of (50c)'s CT-value illustrated in (52) dominates the node corresponding to the former sentence, since the two do satisfy the definition Büring proposes for what it means to be an answer to a question, cited above: (50c), even on its second reading, does “shift the probabilistic weights among the propositions denoted by” (52), even if the latter is to be interpreted as being equivalent to the following question: *What is the activity performed by two dwarfs?*

(52) What did two dwarfs do?

In this case, however, there would be no question in the same CT-value to which the declarative in (50d) would be able to provide an answer in the sense of the above definition.

These data thus show that the procedure proposed by Büring (2003) for deriving the presuppositions of contrastive topics does not lead to intuitively correct results in the case of contrastive topic DPs having a reading Eckardt calls *referential*. In the next section we investigate the consequences of a different approach.

3 A new approach to the presuppositions of the contrastive topic

3.1 Lists of declaratives with contrastive topics

Eckardt (2002) and van Hoof (2003) point out that declaratives containing a contrastive topic⁷⁸ often appear in a list constituted by sentences having parallel structures. In this section, we will look at the formal properties of such lists, because these which will have an important role in our account of the presuppositions introduced by contrastive topics.

The first regularity observed with respect to the lists of declaratives containing contrastive topics is that the denotations of the contrastive topic constituents are taken from the same domain, and also those of the accompanying focus constituents. Van Hoof (2003) refers to this property as the *comparability condition*, and illustrates it with the following example:

(53) Die /MÄNNER haben ein \REZITATIV geprobt
 the men have a recitative rehearsed
 (und die /FRAUEN eine \ARIE).
 and the women an aria
 ‘The MEN have rehearsed a RECITATIVE (and the WOMEN an ARIA).’

(van Hoof 2003: 517)

⁷⁸ As mentioned above, van Hoof (2003) does not use the term *contrastive topic* when referring to the constituents pronounced with the rising intonation in these sentences but the term *focus*. For the sake of coherence, we will reformulate her proposals in Büring's (2003) terminology.

The second property of the lists of sentences under consideration is that the constituent pronounced with the falling tone can occur several times within the list, but the one pronounced with the rise cannot. Van Hoof (2003) calls this feature the *diversity condition*, and illustrates it with the following pair of examples:

- (54) a. *Die /MÄNNER haben ein \REZITATIV geprobt, und die
 the men have a recitative rehearsed and the
 /MÄNNER (haben) eine \ARIE (geprobt).
 men (have) an aria (rehearsed)
 ‘The MEN have rehearsed a RECITATIVE and the MEN (have rehearsed)
 an ARIA.’
- (van Hoof 2003: 521)

- b. Die /MÄNNER haben ein \REZITATIV geprobt, und die
 the men have a recitative rehearsed and the
 /FRAUEN (haben) \AUCH ein Rezitativ geprobt.
 women (have) also an recitative rehearsed
 ‘The MEN have rehearsed a RECITATIVE and the WOMEN have
 rehearsed a recitative, TOO.’
- (van Hoof 2003: 521)

One could argue that the contrast between (54a) and (54b) should not be attributed to the presence of the contrastive topic, since it is derivable from the general pragmatic properties of focus, which follow from the Gricean Maxim of Quantity. As an illustration, consider the following two discourses, whose second utterances are identical:

- (55) A: What did the men rehearse?
 B: The men rehearsed a recitaTIVe_F.
- (56) A: The men rehearsed a final chorus.
 B: No, the men rehearsed a recitaTIVe_F.

(55A–B) is a question-answer sequence, the part of the answer corresponding to the *wh*-expression is focused. (56A–B) is a sequence consisting of two declaratives among which the second one is a correction of the first one, focusing within the latter marks the constituent intended to replace its counterpart in the first sentence. Whenever a speaker answers (55A) by using (55B), or corrects (56A) by using (56B), the implicature arises, due to the Gricean Maxim of Quantity, that there is no element *x* in the set of alternatives to the denotation of *recitative* that could give a true sentence if substituted for the latter expression in (55B) and (56B). These considerations suggest that the ill-formedness of the sentence in (54a) could also be explained by saying that it necessarily contradicts the implicature introduced by the focus, according to which the replacement of the focused constituent in a true

sentence by a constituent having a different denotation cannot produce a sentence that can be true at the same time as the latter one.⁷⁹

In addition to the difficulties the latter suggestion runs into by attributing a clear case of a syntactic deficiency to the lack of an implicature, it faces empirical difficulties as well: it is possible to create conjoined sentences of the form shown in (57B) and (58B), each clause containing a focus but no contrastive topic, which can be considered odd but by no means ungrammatical in the context indicated:

- (57) A: What did the men rehearse?
 B: The men rehearsed a recitaTive_F, and the men rehearsed an Aria_F.
- (58) A: The men rehearsed a final chorus.
 B: No, the men rehearsed a recitaTive_F, and the men rehearsed an Aria_F.

These data point to the conclusion that for the English and German cases we still need a constraint analogous to van Hoof's diversity condition, which prevents the occurrence of sentences like (54a), and which is essentially based on the contribution of the contrastive topic to the interpretation of the sentence.

As far as Hungarian is concerned, it appears at first sight that there is no need to introduce explicit restrictions for preventing the occurrence of sentences like (54a), since in prototypical cases, contrastive topics are followed in a Hungarian sentence by constituents in the [Spec, FP] position, which are explicitly claimed in the literature to have an exhaustive interpretation anyway (cf. Szabolcsi 1981a, 1994, Kenesei 1986, 1989, É. Kiss 1998b, 2002, among others), due to which sentences like (57B) or (58B) could not be licensed. Consider (59):

- (59) A férfiak [_{FP} egy \REcitatívót próbáltak.]
 the men a recitative.ACC rehearsed
 'It is a recitative that the men rehearsed.'

The exhaustive interpretation of the preverbal focus means that the truth of (59) entails, with or without a rising pitch accent on the sentence-initial constituent, that no other statement of the form *The men rehearsed x*, where *x* is assumed to denote an alternative to the denotation of *recitative*, can be true simultaneously with it. (The fact that the sentence is translated into English with the *it*-cleft intends to emphasize this, cf. É. Kiss 1998b.) Although universal DPs/adverbs expressing the semantic focus of the sentence are excluded from the [Spec, FP] position, as (60) shows, they also have an exhaustive interpretation, due to their lexical meaning:

⁷⁹ On this approach, one could prove, given the well-formedness of (54b), that the constituents pronounced with a rising accent and those pronounced with a fall cannot both be considered foci, contrary to van Hoof's views.

- (60) A férfiak [_{DistP} \MINden recitívót elpróbáltak.]
 the men every recitative.ACC VM.rehearsed
 ‘The men rehearsed \EVERY recitative.’

The interpretation of universal quantifiers ensures that given the truth of (60) (with or without the pitch accent on the sentence-initial constituent), all statements of the form *The men rehearsed D recitatives*, where *D* stands for a determiner, will be false if their truth is not a logical consequence of the truth of (60).⁸⁰

The third case when the truth of a declarative containing a contrastive topic automatically entails the falsity of any statement that results from the replacement of the focused constituent by a constituent having an alternative meaning is when the contrastive topic is followed by a negative particle with a falling pitch accent, given that the only alternative introduced by the denotation of the negative particle non-identical to itself is a non-overt affirmative element (cf. Krifka 1999):

- (61) /János [_{NegP} \NEM látogatta meg Marit.]
 John not visited VM Mary.ACC
 ‘As for John, he did not visit Mary.’

There is one case, however, where the truth of a Hungarian sentence with a constituent focus does not automatically entail the falsity of a version of the latter containing a different focus. This is the case when the focus accent on the verb indicates verb or VP-focusing, as one of the interpretations of the sentence below, corresponding to the English translation in i) illustrates. On this interpretation, the sentence is answering a question of the form *What did John do?* The truth of the other interpretation of the sentence, on which the accented verb marks verum focus, translated in (62ii), excludes, naturally, the truth of any version of the sentence that contains an alternative to the verum focus, that is, a falsum focus.

- (62) János \MEGfőzött.
 John VM.cooked.
 i. ‘John [cooked the \MEAL]_F.’
 ii. ‘John \DID cook the meal.’

As an illustration, consider the following question-answer pair, whose second element is a somewhat odd but definitely not unacceptable sentence:

- (63) A: Mit csinált János?
 what.ACC did John
 ‘What did John do?’

⁸⁰ Whenever a universal determiner of a DP only moves to preverbal position to express focusing the NP part of the constituent, the DP is allowed to appear in [Spec, FP] position, as illustrated below:

(i) A férfiak [_{FP} minden \REcitívót próbáltak el.]
 the men every recitative.ACC rehearsed VM
 ‘The men rehearsed every \recitaTive.’

B: János \MEGfőzött, és János \MEGvacsorázott.
 John VM.cooked and János VM.had.dinner
 ‘John cooked the meal and John had dinner.’

The above data show that the verb or VP-focus in a declarative sentence does not automatically exclude the truth of alternative statements in which the focused constituent is replaced for an alternative. However, when the sentence-initial constituent is pronounced with the contrastive topic intonation in both conjuncts of (63B), illustrated in (64), the sentence becomes just as ungrammatical as (54a), which indicates that one needs, even in Hungarian, explicit restrictions prohibiting the occurrence of lists of sentences where the same contrastive topic constituents are followed by different foci:

(64) * /János \MEGfőzött, és /János \MEGvacsorázott.
 John VM.cooked and János VM.had.dinner
 *‘As for John, he cooked the meal, and as for John, he had dinner.’

The next section will be concerned with the issue of whether these restrictions can be derived from a new approach to the presuppositions of the contrastive topic.

3.2 Towards new definition: first attempt

In this section, we will propose a new way of defining the presuppositions introduced by the contrastive topic, which is intended to be an alternative to the approaches defended by Kadmon (2001) and Büring (2003), according to which declaratives containing contrastive topics presuppose the presence of particular explicit or implicit questions in the discourse.

The proposal is inspired by several previous observations and proposals, some of which have already been discussed above. The first of these is due to Szabolcsi (1980, 1981a), and says that a sentence with a contrastive topic indicates that there are things in the universe of discourse other than that referred to by the contrastive topic about which the same question (that is, the one that the sentence is answering) could sensibly be raised. The second one is the observation by Eckardt (2002) and van Hoof (2003), discussed in the previous section, according to which, in a list of sentences that differ from each other in the contrastive topic and the focus constituents, the same contrastive topic cannot be paired up with two different foci. The third one is the observation made by van Hoof (2003: 520), according to which the participants of conversations where a declarative with a contrastive topic appears seem to presuppose the existence of a complete list of sentences, each containing a contrastive topic that denotes an alternative of the contrastive topic of the original sentences, followed by a focus that denotes an alternative to the denotation of the focus in the original sentence. The fourth inspiration comes from Krifka’s (2001a) proposals concerning the properties of answers presupposed by multiple constituent questions with a matching question reading and the types of answers such questions expect, to be discussed below. Taken together, the observations listed above express, I believe, that whenever a contrastive topic

appears in a sentence, it conveys that there is a unique way of assigning to each alternative of the contrastive topic denotation an alternative of the focus denotation. I propose that the latter aspect of the meaning of declaratives containing a contrastive topic should be considered part of their presuppositions, which are summarized in (65):

(65) *Presupposition of declaratives containing a contrastive topic (first version):*

Let S be a sentence containing a contrastive topic (α) and a focus (β) expression. Let R stand for the part of S remaining after the contrastive topic and the focus have been removed from it. Let $\llbracket S \rrbracket = \llbracket R \rrbracket(\llbracket \alpha \rrbracket, \llbracket \beta \rrbracket)$. S then presupposes the following:

- a) there is a set $\text{ALT}(\llbracket \alpha \rrbracket)$ of alternatives to $\llbracket \alpha \rrbracket$ (which includes $\llbracket \alpha \rrbracket$ itself);
- b) there is a set $\text{ALT}(\llbracket \beta \rrbracket)$ of alternatives to $\llbracket \beta \rrbracket$ (which includes $\llbracket \beta \rrbracket$ itself);
- c) there is a function $f: \text{ALT}(\llbracket \alpha \rrbracket) \rightarrow \text{ALT}(\llbracket \beta \rrbracket)$ with the following property:
for any $x \in \text{DOM}(f)$, $f(x)$ is the element of $\text{ALT}(\llbracket \beta \rrbracket)$ for which $\llbracket R \rrbracket(x, f(x))$ is true.

(65) expresses that a declarative with a contrastive topic presupposes that there is a unique way of assigning to all alternatives of the denotation of the contrastive topic one alternative of the denotation of the focus constituent such that the assignment of a value to an argument means that replacing the latter for the contrastive topic and the former for the focus denotations in the proposition expressed by the original declarative results in a proposition that can be true at the same time as the proposition expressed by that declarative. (65a, b) leave it unspecified how the set of alternatives to the contrastive topic and the focus denotations are determined. We will assume that whenever the context does not specify explicitly what the set of alternatives to these denotations consist of, they are equivalent to the set of all denotations of the relevant type (i.e. the focus semantic value of the contrastive topic as in Rooth 1985). This will make it possible to predict why native speakers are confident in deciding whether a particular sentence that contains a constituent pronounced with the contrastive intonation is grammatical or not, even without any contextual support. Condition c) specifies how an element of the domain of the presupposed function is mapped onto an element of the range, and ensures at the same time that the value assigned by the function to the denotation of the contrastive topic is equivalent to the denotation of the focus.

Let us consider how the proposal in (65) can account for certain properties of the interpretation of contrastive topics observed above. First of all, the proposal can account for the fact that declaratives containing contrastive topics (with the exception of those where the latter constituent is followed by a *verum* or a *falsum* focus) can serve as partial answers to matching questions (although the proposal does not require that such questions be explicitly or implicitly present in the

context where the relevant declarative is uttered). The argument is based on Krifka's (2001a) theory on the interpretation of matching questions. The most important claim of this theory for our purposes is that what matching questions ask for is a function, a mapping procedure from a given and identifiable domain to values, where the domain of the function consists of the domain of one of the interrogative expressions, and the range consists of the domain of the other. Krifka argues that several observations about matching questions follow from this account. These include i) the D-linking of one of the question words (this defines the domain of the function the matching question asks for), ii) the fact that each element of the domain of one of the D-linked question words has to be assigned an element from the domain of the other one (a function has to map each element of its domain to an element in its range), and iii) that the domain of the D-linked expression has to contain more than one element (functions with one element in their domain are degenerate).

According to the proposal described in (65), declaratives containing a contrastive topic are seen as specifying the value of a function that maps the elements of the set consisting of the denotation of the contrastive topic and its alternatives into the set consisting of the denotation of the focus and its alternatives. Given that the types of declaratives that contain contrastive topics and provide partial answers to matching questions are such that the contrastive topic constituent corresponds to the D-linked interrogative expression and the focus constituent to the other one, as seen in Section 2.5 above, a declarative of the latter type can be viewed as specifying one argument-value pair determined by the function asked about by a matching question. Thus, the fact that partial answers to matching questions can take the form of declaratives that contain a contrastive topic (in addition to an obligatory focus) follows from our assumptions.

Second, the approach to the presuppositions of contrastive topics proposed in (65) explains the ill-formedness of examples like the one in (43a), repeated below:

- (66) **J*Ános [_{DistP} \TÖBB, mint öt diákot meglátogatott.]
 John more than five student.ACC VM.visited
 'As for John, he visited more than FIVE students.'

According to (65), a declarative with a contrastive topic is to express a relation between the denotation of the contrastive topic and that of the focus of the sentence. Given that the example in (66) is not an appropriate way of encoding a constituent focus,⁸¹ a condition for the legitimate occurrence of the contrastive topic is not satisfied.

Finally, the proposal is compatible with the fact that an interrogative sentence can form a felicitous discourse with a declarative containing a contrastive topic that

⁸¹ For (67) to be able to express constituent focus of the object DP, the latter would have to occupy the focus position, for it to be able to express VP focus, the verb would also have to be stressed, as discussed in Section 2.5 above.

does not provide a congruent answer to the former, as illustrated in (1A–B) above, repeated below in (67):

- (67) A: Which book would Fritz buy?
 B: Well, [I]_{CT} would buy [The Hotel New HAMPSHIRE]_F.
 (Büring 1997: 66, labeling follows Büring 2003)

As discussed above, an exchange like (67) would not be considered acceptable in a framework like that of Büring (2003) or Kadmon (2001), which formulate the presuppositions of contrastive topics with reference to what questions declaratives containing such constituents must be preceded by in a felicitous discourse.

Having illustrated how the proposal made in (65) for capturing the presuppositions of contrastive topics works, in the next section we will discuss a new set of data that a theory concerned with the semantic-pragmatic properties of contrastive topics has to be able to account for.

3.3 Ill-formedness in the presence of a contrastive topic

In addition to predicting whether a question followed by an answer containing a contrastive topic is going to be felicitous in the language, a theory of contrastive topics also has to account for why certain combinations of a contrastive topic and a focus cannot give rise to grammatical sentences. Consider the following example, which is not acceptable in any context in Hungarian:

- (68) * /MINden diák [DistP \MINden előadásra eljött.]
 every student every talk.SUBJ VM.came
 * 'EVERY student attended \EVERY talk.'

Given that there is no prohibition in Hungarian against universal DPs appearing either as the contrastive topic or as the semantic focus of the sentence (the latter in the [Spec, DistP] position), as discussed in Chapter 1, or against two neighboring universal quantifiers, as illustrated in (69), the ill-formedness of (68) must be due to the semantics/pragmatics of the contrastive topic.

- (69) [DistP Minden diák [DistP \MINden előadásra eljött.]]
 every student every talk.onto VM.came
 'Every student attended \EVERY talk.'

In the framework of Büring's (1997) theory, sentences like (68) are ruled out on the basis of the fact that they cannot give rise to the implicature in (70), introduced by the contrastive topic:⁸²

⁸² Büring (1997) does not state whether he considers this implicature a conventional or a conversational one. I believe that the implicature should not be considered a conversational one, since the latter are cancellable, and therefore a constant property of (potential) sentences like their grammaticality cannot be based on them. Lee (2004, 2006) argues that the implicature carried by the contrastive topic is a conventional one, since it is associated with structural properties of the relevant sentences. Lee (2000), however, claims that

- (70) Given a sentence A, containing a contrastive topic, there is an element Q in $\llbracket A \rrbracket^{ct}$ such that Q is still under consideration after uttering A.
(Büring 1997: 71, terminology changed to follow Büring 2003)

According to Büring, the claim formulated in (70) is identical to saying that there is a question in the set of questions denoted by $\llbracket A \rrbracket^{ct}$ that is still *disputable*. Disputability of a question means that there should be at least one element in the set of propositions corresponding to the question that is informative and non-absurd with respect to the common ground, that is, one that is not included in it and does not contradict it (Büring 1997: 71). The question that is left disputable after the utterance of a declarative with a contrastive topic is referred to by Büring as the Residual Topic. Let us assume that the CT-value of (68) is equivalent to the set of questions in (71), represented in terms of a set of sets of propositions in (72). In the latter, bracketing reflects the intended scope-relations (e.g. (every student(some talk(attended))) represents the $\forall\exists$ -reading of the sentence *Every student attended some talks*):

- (71) $\llbracket (68) \rrbracket^{ct} = \{\text{How many talks did every student attend?}, \text{How many talks did some students attend?}, \dots, \text{How many talks did no student attend?}\}$
- (72) $\llbracket (68) \rrbracket^{ct} = \{\{\text{every student (every talk (attended))}, \text{every student (some talk (attended))}, \dots, \text{every student (no talk (attended))}\}, \{\text{some student (every talk (attended))}, \text{some student (some talk (attended))}, \dots, \text{some student (no talk (attended))}\}, \dots, \{\text{no student (every talk (attended))}, \text{no student (some talk (attended))}, \dots, \text{no student (no talk (attended))}\}\}$

The intended propositional content of (68), namely, ‘For each pair consisting of a student and a talk, it is the case that the former attended the latter’, entails an answer to all the questions in (71), in other words, does not leave any question disputable. This suggests that it is possible to account for the ill-formedness of (68) in the spirit of Büring (1997). As pointed out by Krifka (1999: 22–23) and Kadmon (2001: 387), however, the proposal faces one serious problem, namely, it predicts that contrastive topics should not appear in the last conjunct of a complete answer to a root question, as illustrated in (73B):

- (73) A: What did Bill and John eat?
B: /BILL_{CT} ate a \SOUP_F and /JOHN_{CT} ate a \Carrot_F.

at least some constituents (namely, predicates) pronounced with a contrastive prosodic contour “generate scalar propositions that are more than conversational or conventional ‘implicatures.’ ” (p. 243.) In a different framework, proposed by Potts (2005), conventional implicatures are connected to lexical expressions.

Büring (2003) accounts for the ungrammaticality of declaratives like that in (68) by saying that the proposition that would be expressed by them answers not only the subquestion dominated by the declarative in the relevant strategy but also the root question (which, in the present case, would be something like *For all (relevant) quantities q , specify the number of talks that q students attended*). This, however, contradicts the presupposition that the theory attributes to declaratives containing a contrastive topic, namely, that the declarative must be dominated by a strategy. I believe that this approach gives correct results for the case under consideration, but, given the technical problems of generating the root questions for each declarative sentence containing a contrastive topic, outlined above, and to be discussed in Chapter 3, the question arises whether the same facts can be accounted for within an alternative framework, for example, with the help of the approach to the presuppositions of contrastive topics in (65) above or an appropriate amendment thereof. These questions will be taken up in the next section.

3.4 Accounting for ill-formedness within the new proposal

In order to see whether (68) can be accounted for by saying that its intended propositional content is not compatible with the way the presuppositions of contrastive topics were defined in (65), one needs to establish what the domain and the range of the function f consists of that (68) should presuppose if it were well-formed. There are two possible alternatives to consider. On the one hand, the alternatives could be elements of (contextually restricted) sets of denotations of the same type as the denotations of the prosodically marked subconstituents of the contrastive topic and the focus expressions, that is, of the prosodically marked determiners. On the other hand, the alternatives could be elements of sets of denotations of the same type as the denotations of the phrases (DPs) that contain the prosodically marked determiner. The first solution is supported by the intuition that the contrastive topic of (68) evokes a contrast between the meaning of *every student* and that of *some students*, *most students* and *no student*, for example, and between the meaning of *every talk* and *some talks*, *most talks* and *no talk*, among others. This solution, however, does not account for the following facts. (74) below, analogous to Eckardt's (2002) examples shown in (50), has an interpretation, paraphrased in (74i), where the meaning of the sentence-initial DP is not contrasted to the meanings of all DPs containing different determiners, but only to those with which the speaker can refer to a particular set (cf. Eckardt's term *referential topic*), like *four children* or *six children*:

- (74) /ÖT diák [FP \Jánossal találkozott.]
 five student John.with met
 'FIVE students met \JOHN.'
 i. 'There are five students for whom it was John they met.'
 ii. 'It is John that five students met.'

One can only account for the fact that the two readings of (74) seem to evoke different alternatives to the sentence-initial DP if the set of alternatives introduced

by a complex expression playing the role of contrastive topic is not generated mechanically by combining the denotations of all possible alternatives to the prosodically marked subconstituent of the expression to the denotation of the rest of the phrase, but by taking first the denotation of the whole phrase, and then generating all denotations of the same type that are composed together by combining an alternative to the denotation of the stressed subconstituent with the meaning of the rest of the DP. Such an approach could account for the fact that the alternatives introduced by the contrastive topic of (74) on its “referential” reading include *three children*, *four children*, etc., but not *every child* or *less than three children*.⁸³ This means that the alternatives introduced by the contrastive topic denotation can only be determined by paying attention to both the denotation of the whole phrase (individual vs. generalized quantifier) and to the denotation of the prosodically marked subconstituent. For this reason we propose the following distinction, which will be adhered to in the rest of this work. We will refer to the constituents that satisfy the syntactic and prosodic criteria proposed by É. Kiss (2002) for being situated in [Spec, TopP] and contain a constituent with a rising pitch accent or are followed by a resumptive element as *contrastive topic phrases*. These are going to be enclosed within square brackets, marked with the subscript ‘CT’ in what follows. The prosodically marked subconstituent within the contrastive topic phrase will be referred to as the *contrastive topic (proper)*, which is going to be distinguished from the rest of the sentence by typographical means (capitalization and the mark ‘/’ that stands for the rising pitch accent). An analogous distinction will be introduced between the phrase that contains the constituent marked as the (semantic) focus by prosodic means (falling pitch accent), which is going to be referred to as the *focus phrase (F)*, and its prosodically marked subconstituent, to be referred to as the *focus (proper)*. This means that when we are referring to the *focus phrase* in what follows, we will mean the phrase containing the constituent that is marked prosodically for focus, which is not necessarily identical to the constituent situated in what É. Kiss’s (2002) calls [Spec, FP]. For example, our use of the term *focus phrase* will be applicable to constituents in [Spec, DistP] as well. In view of the terminological conventions in the literature about Hungarian, the suggestion for making the above distinction might appear slightly unusual, but, I believe, is necessitated for the precise discussion of the relevant examples. The distinction characterized above was inspired by the distinction introduced by Krifka (2006) between Focus and Focus Phrase.⁸⁴

By relying on the above distinction, one cannot yet explain why (74) is compatible with a reading where the interpretation of the contrastive topic phrase

⁸³ Cf. van Rooij’s (2008) discussion of the same distinction, which proceeds along similar lines, by advocating a distinction between the quantificational interpretation of topical quantifiers and the interpretation on which they denote discourse referents.

⁸⁴ Krifka’s (2006) aim in making the above distinction was to explain, among others, why in sentences like (i) below the exclusive particle *only* can be said to quantify over a set corresponding to denotations of the form *the dog owned by the man that introduced x to Sue*, in spite of the fact that only *Bill* is marked prosodically:

i) John only remembered [the dog owned by the man that introduced Bill_F to Sue]_{FP}

öt diák ‘five student’ is contrasted to the interpretation of *Mary’s son* or *John*. I believe that the latter interpretation is only to be accounted for if we assume that in this case the whole DP is marked prosodically (i.e. the rise extends to the noun, which could be argued, I believe, on phonetic grounds), and therefore it is considered to be the contrastive topic proper and the contrastive topic phrase at the same time.

In view of the considerations above, the set of alternatives to the denotation of the contrastive topic phrase and the focus phrase can be generated, for any phrase of the category XP, as follows:

(75) *Generating the set of alternatives to a contrastive topic phrase or a focus phrase:*⁸⁵

Assume that XP is a phrase that satisfies the (syntactic, semantic and prosodic) requirements of being considered a contrastive topic phrase or a focus phrase, γ stands for the subconstituent bearing a rising/falling pitch accent within XP, and δ for the rest of XP. Assume that $[[XP]] = g([[\gamma]], [[\delta]])$, where g stands for a semantic operation.

Then $ALT([[XP]]) \subseteq [[XP]]^f$, and

for any $x \in ALT([[XP]])$: $\exists y \in [[\gamma]]^f$ such that $x = g(y, [[\delta]])$.

(75) means that the set of alternatives to the denotation of a constituent XP, denoted by $ALT([[XP]])$, consists of denotations of the same type as $[[XP]]$ (that is, it constitutes a subset of the focus-semantic value of the expression, $[[XP]]^f$, cf. Rooth 1985) whose denotations can be generated by combining the denotation of δ with an alternative of the denotation of γ in the same manner as the denotation of γ is combined with the denotation of δ to yield the denotation of XP. The reason why we assume that the set of alternatives introduced by the contrastive topic and focus phrases is a subset of the focus semantic values of these expressions is that we want to allow for the possibility of these being restricted by the context or by information within the sentence itself. The first of these options is realized, for example, when the sentence containing the contrastive topic is intended as a partial answer to a multiple constituent question where the domain of the D-linked interrogative expression is given, whereas the second option is realized, as will be illustrated in Chapter 3, when the contrastive topic is followed by a *verum/falsum* focus.

Having made a proposal as to how the domain and the range of the function presupposed by the contrastive topic should be defined for the general case, let us consider how (65) is to be extended to account for the ill-formedness of (68).

If (68) were well-formed, the function presupposed by it would have to map the denotation of *every student* to the denotation of *every talk*. If a function f maps an argument A onto a value B provided that it holds that the proposition ‘A attended B’ can be true simultaneously with the intended propositional content of (68)

⁸⁵ Here we are ignoring the case of contrastive topic phrases followed by resumptive pronouns, which, however, could be incorporated without much difficulty.

(‘Every student attended every talk’), then it follows for all elements of its domain (which correspond to generalized quantifiers that are generated by combining the denotation of *student* with all alternatives to the denotation of the determiner *every*), what value they are mapped onto by f . The value is equivalent to the denotation of *every talk* whenever the argument of the function is equivalent, for example, to the denotation of *more than two students*, or *at least three students*, etc., since if every student attended every talk then it is also true that more than two or at least three students attended every talk (provided that the number of students is more than three). However, the value is equivalent to the denotation of *no talks* whenever the argument is equivalent to the denotation of *exactly two students*, *fewer than five students*, etc. since, if every student attended every talk, then, provided that the number of students is at least three, there cannot be any talks that exactly two or fewer than five students attended. This shows, I believe, that if we want to account for the ill-formedness of sentences like (68) on the basis of the fact that they contradict the presuppositions introduced by the contrastive topic, then these presuppositions should also include the following: given the value the function f assigns to the denotation of the contrastive topic, it must not be entailed for all other arguments of f what value is assigned to them. Thus, we propose that (65) should be modified as follows:⁸⁶

(76) *Presupposition of declaratives containing a contrastive topic (final version):*

Let S be a sentence containing a contrastive topic phrase (CT) and a focus phrase (F). Let R stand for the part of S remaining after the contrastive topic and the focus have been removed from it. Let $\llbracket S \rrbracket = \llbracket R \rrbracket (\llbracket CT \rrbracket, \llbracket F \rrbracket)$. S then presupposes the following:

- a) there is a set $ALT(\llbracket CT \rrbracket)$ of alternatives to $\llbracket CT \rrbracket$ (which includes $\llbracket CT \rrbracket$ itself);
- b) there is a set $ALT(\llbracket F \rrbracket)$ of alternatives to $\llbracket F \rrbracket$ (which includes $\llbracket F \rrbracket$ itself);
- c) there is a function $f: ALT(\llbracket CT \rrbracket) \rightarrow ALT(\llbracket F \rrbracket)$ with the following properties:
 - i) for any $x \in DOM(f)$, $f(x)$ is the element of $ALT(\llbracket F \rrbracket)$ for which $\llbracket R \rrbracket(x, f(x))$ is true, and
 - ii) for any $x \in DOM(f)$ there is at least one $x' \in DOM(f)$ such that the value of $f(x)$ does not determine the value of $f(x')$.

(76) contains one new element as compared to (65), namely, clause (cii). It serves the purpose of ensuring that the function presupposed by a declarative of the relevant type be such that the value it assigns to the denotation of the contrastive topic phrase does not determine what the values assigned to all other elements of the domain of the function are. Note, importantly, that (76) does not require that

⁸⁶ Various versions of the proposal were formulated in several publications from Gyuris (2005), when it was first presented (cf. Gyuris 2008a, 2009, for example), of which I consider (76) the most complete.

given a sentence S there be well-formed sentences having structures parallel to that S of where the contrastive topic phrase is replaced for phrases with denotations in $ALT(\llbracket CT \rrbracket)$. The case studies to be presented in Chapter 3 will point to the importance of this condition.⁸⁷

Note that the way the alternatives introduced by the denotations of contrastive topic and focus phrases are defined in (75) ensures that in a list of sentences like the one cited in (50), repeated in (77a–d), two sentences can contain identical contrastive topic phrases, provided that their intended denotations are different, and, that, assuming that the set of dwarfs has seven elements, the list cannot be continued any further, since the referents of the contrastive topic phrases in the list cover the whole set of existing referents in the given context.

- (77) a. The seven dwarfs were busy cooking dinner.
 b. /THREE dwarfs were peeling \poTAtoes,
 c. /TWO dwarfs were fetching \BEER, and
 d. /TWO dwarfs were roasting \SAUsages.

(Eckardt 2002, intonational marking added)

In what follows, we will assume that contrastive topics introduce the presupposition described in (76) above, given the definition in (75) of what count as alternatives to the denotations of the contrastive topic and focus phrases. Although (76), as it stands, does not apply to cases where a sentence contains more than one contrastive topic, I believe that the proposal could be extended to these cases by assuming that the domain of the function presupposed by sentences with multiple contrastive topics consists of all the n -tuples constituting the Cartesian product of the sets of all alternatives to the individual contrastive topic phrase denotations, (that is, all n -tuples in $ALT(\llbracket CT_1 \rrbracket) \times ALT(\llbracket CT_2 \rrbracket) \times ALT(\llbracket CT_3 \rrbracket)$).

The next section will look at the source of a second kind of contrast that is often argued to be part of the meaning of the contrastive topic.

⁸⁷

Sauerland (2005), which the present proposal was formulated independently of, also puts forth an approach proposing that contrastive topics presuppose a function with comparable properties. Gécseg (2001) also argues, also independently of the present approach, that the semantic relation between contrastive topics and foci can be characterized as a function.

4 The second type of contrast contrastive topics introduce

Up to now, we have been concentrating on one type of contrast that a declarative *S* containing a contrastive topic evokes: that between the intended propositional content *p* of *S* and the propositions that are expressed by variants of *p* in which the denotation of the contrastive topic phrase and that of the focus phrase are replaced for their alternatives. There is, however a second kind of contrast contrastive topics evoke: they seem to convey that the alternative propositions are such that the alternatives to the denotation of the contrastive topic phrase are paired up in them with alternatives to the denotation of the focus phrase of *S* that are different from the latter. As already cited above, the point was first made by Szabolcsi (1981a), who claims that there is a ‘meaning surplus’ associated with (78) below, which conveys that there is an element *a* in the universe of discourse such that if the question *Did Peter sleep on a?* were asked about it the answer would be negative.

- (78) [TC A padlón] [F Péter] aludt.
 the floor.on Peter slept
 ‘As for the floor, *PETER* slept there.’

(Szabolcsi 1981a: 144, glosses added)

In this section we will propose a new strategy to account for the interpretational feature described above, in terms of an implicature, but before turning to that, we review previous discussions of the phenomenon, by Büring (1997), Kadmon (2001) and Büring (2003). Consider the following example:

- (79) A: Did your wife kiss other men?
 B: [MY]_{CT} wife [DIDN’T]_F kiss other men.

Büring (1997: 56)

According to Szabolcsi’s (1981a) proposal, (79) would have to convey that there is another wife in the context that did kiss other men, which I find intuitively correct. Büring (1997, 1999), attributes a weaker effect to (79B), however. According to him, the use of (79B) serves the aim of moving the topic of conversation to alternatives of the contrastive topic denotation, i.e. other wives in the context. He attributes this effect to an implicature introduced by the contrastive topic, repeated below:

- (80) Given a sentence A, containing a contrastive topic, there is an element Q in $\llbracket A \rrbracket^{ct}$ such that Q is still under consideration after uttering A.

(Büring 1997: 69, notation changed)

If the focus semantic value of (79B) is as shown in (81), the CT-value as in (82) and (83), then the above claim is equivalent to saying that (79B) implicates that the answer to at least one of the questions in (83) is not entailed by it.

- (81) $\llbracket(79B)\rrbracket^f = \{\text{my wife kissed other men, my wife didn't kiss other men}\}$
- (82) $\llbracket(79B)\rrbracket^{ct} = \{\{\text{my wife kissed other men, my wife didn't kiss other men}\}, \{\text{your wife kissed other men, your wife didn't kiss other men}\}, \{\text{Bolle's wife kissed other men, Bolle's wife didn't kiss other men}\}, \{\text{Fritz's wife kissed other men, my wife didn't kiss other men}\}, \dots\}$
- (83) $\llbracket(81B)\rrbracket^{ct} = \{\text{did my wife kiss other men, did your wife kiss other men, did Bolle's wife kiss other men, did Fritz's wife kiss other men...}\}$

This means that Büring (1997) does not account for the effect that the use of (79B) suggests that there is an alternative to the denotation of the contrastive topic such that if a statement is made about it by using the same structure as (81B), the latter will have a *different* focus (that is, focus on a non-overt affirmative element).

Kadmon (2001) disagrees with Büring regarding the way the latter defines the implicature associated with the contrastive topic, shown in (80). She argues instead that what (79B) implicates is that “some element (i.e. question) in the topic semantic value of B’s utterance is still to be considered after that utterance has been made – not necessarily because the answer is still disputable, but quite possibly because B wishes to remind A of that answer” (p. 387). This implicature she considers a conversational one, since it is deletable. She illustrates her claim with the following example. If the only potential kissers are Larry and Bill, and it is known that each of them kissed just one girl, then (84) below is felicitous, without implying that any element of the CT-value of (84C) is still to be considered:

- (84) A: Who kissed who?
 B: (Let’s see...) [_{CT} Larry] kissed [_F Nina].
 C: (Right, and) [_{CT} Bill] kissed [_F Sue].

Consider, however, a discourse where (84A) is substituted for (84A’), which makes explicit reference to the relevant individuals:

- (84) A’: Whom did Larry and Bill kiss?

Although (84B) and (84C) do form a coherent discourse with the above question, I do not think that the speaker of (84C) could be said to be wanting to remind the questioner of the answer to the question *Who did Bill kiss?*, since it was in fact the questioner who wanted to know about both individuals, so (s)he does not need to be reminded. This indicates that the approach suggested by Kadmon (2001) to defining the implicatures introduced by contrastive topics cannot explain all the relevant examples.

As opposed to the previous two accounts, Büring (2003) follows the proposal made by Szabolcsi, arguing that on hearing the answer to the question in (85A), speakers will attribute to it some sort of indication that other people ate other things:

(85) Q: What about Fred? What did he eat?

A: FRED_{CT} ate the BEANS_F.

(Büring 2003: 522)

Büring claims that this indication arises due to a standard conversational implicature, and is based on the fact that the conventional, discourse-related meaning of (85A) makes reference to a more complex discourse structure containing questions of the form *What did X eat?* According to Büring (2003), the conversational implicature is derived in the following way: “First, given that we just heard what Fred ate, the question will be about someone else other than him (Informativity). Second, if the speaker knew that someone else ate beans, too, they could have been briefer and more informative if they had said ‘Fred and Y ate the beans’ instead. We therefore conclude that the speaker is aware of other people having eaten, and is not aware that any of them ate beans. From this, the stronger statement that the speaker is aware that they did not eat beans is derived in the way familiar from, e.g. generalized quantity implicatures (cf. Gazdar 1979).” (Büring 2003: 523).

Büring argues that when (85A) is continued by saying *...but I don't know what the others ate* or *...and maybe Mary ate beans, too*, the implicature is cancelled. I believe, however, that the above reasoning runs into a serious problem, due to the fact that an answer like *Fred and Y ate the beans* to the question in (85Q) does not at all count as a congruent one, and, therefore, cannot be expected to be given by cooperative speakers as a reaction to (85Q). Thus, one is not supposed to base a reasoning about the interpretation of (85A) on these premises.

What I suggest, instead, is that the effect (85A) makes should be due to an implicature evoked by the contrastive topic, which can be expressed as a property of the function that is part of the presuppositions of the contrastive topic, defined in (76). I propose that the fact that speakers assume that in all alternative propositions evoked by a declarative *S* containing a contrastive topic, a different alternative to the denotation of the focus of *S* appears is to be captured by saying that the function presupposed by *S* maps different elements of the domain onto different elements of the range, in other words, it is injective.⁸⁸

(86) *Implicature introduced by a declarative sentence S containing a contrastive topic:*

The function presupposed by *S* is injective.

Sometimes it is possible to continue a declarative containing a contrastive topic with one in which an expression denoting one alternative of the focus phrase plays the role of the contrastive topic phrase and an expression whose denotation can be considered an alternative of the denotation of the contrastive topic phrase plays the role of the focus phrase, the rest of the sentences remaining the same, as illustrated in the following example:

⁸⁸

Formally, a function $f: A \rightarrow B$ is injective iff for any $a, a' \in A$: if $a \neq a'$, then $f(a) \neq f(a')$.

- (87) [CT /Okosnak] [FP \János okos], [CT /PÉter] [FP csak \SZORgalmas.]
 clever.DAT John clever Peter only conscientious
 ‘As for cleverness, it is John who is clever; Peter, he is only conscientious.’

I believe that the only way to account for why sequences of the above type can be felicitous is to say that the speaker assumes that the alternatives to the denotation of the contrastive topic phrase of the first clause are associated with different elements of the set of alternatives to the denotation of the focus phrase, and that all elements of the latter set are associated with one element of the former set. This means that the speaker takes the function presupposed by the first conjunct of sentences like (87) to be bijective (being surjective in addition to being injective⁸⁹). Since bijective functions are invertible, it is expected that sentences asserting that an element of the domain of the function is mapped onto an element of the range and those asserting that a particular element of the range is associated with an element of the domain are truth-conditionally equivalent.⁹⁰

This closes our discussion of the second type of contrast evoked by a declarative containing a contrastive topic. In the next section the results of the chapter are summarized.

5 Summary

In this chapter, we investigated some properties of discourses where declarative sentences with contrastive topics can appear. First, we critically reviewed the proposals made by Büring (1997), Kadmon (2001) and Büring (2003) to capture the requirements declaratives with contrastive topics impose on the discourses they appear in, e.g. regarding the types of questions whose explicit or implicit presence is required for the licensing of these declaratives. In these theories, three types of question-answer pairs have been identified where the appearance of a contrastive topic is felicitous in the answer. However, none of the approaches has been found to be able to handle the full range of relevant data in the languages they were meant to explain, or relevant cross-linguistic data (from Hungarian). Since declaratives containing contrastive topics have been considered similar to those containing multiple foci in that both kinds of structures encode answers to multiple constituent questions, we investigated the syntactic and semantic properties of these kinds of structures in English and in Hungarian. We looked closely at the intuition behind

⁸⁹ Formally, a function $f: A \rightarrow B$ is surjective iff for any $b \in B$ there is an $a \in A$ such that $f(a) = b$.

⁹⁰ Van Rooij (2008) proposes the following Topic Felicity Condition:

“There exists at least one alternative that is derived from substituting topic and focus values for other salient objects that is (i) not entailed by the assertion, and (ii) compatible with what the speaker knows.”

As far as I can see, van Rooij’s felicity condition, not distinguishing between alternatives to topic and focus values in the alternative assertions captures the combined effect of (76) and (86) in one step. Although detailed comparison of the two approaches must wait for a different occasion, I believe, as remarked above already, that certain solid grammaticality differences between Hungarian sentences containing a contrastive topic phrase and their counterparts where the same expression occupies a postverbal position should be based on stronger criteria (the ability of the expression to introduce a particular presupposition) than the introduction of implicatures (which might be cancellable).

the most recent of the approaches investigated in Section 1, that of Büring (2003), according to which contrastive topics presuppose a strategy, as well as its technical implementation. We have established that the approach cannot account for the licensing conditions and the presuppositions introduced by quantificational contrastive topics on their readings Eckardt (2002) refers to as ‘denotational’. In Section 4 we put forth a new proposal for capturing the presuppositions introduced by contrastive topics, in the course of developing it we made essential use of well-known properties of lists of declaratives containing contrastive topics. We proposed a distinction between contrastive topic phrases and focus phrases, identified on the basis of syntactic criteria, and contrastive topics and foci proper, identified by prosodic means. We argued that sentences containing contrastive topics presuppose the existence of a function having particular properties. In the last section of the chapter we looked at one additional semantic effect declaratives containing a contrastive topic and a focus seem to convey, namely, that different alternatives to the meaning of the contrastive topic phrase should be associated with different alternatives to the focus phrase, and attributed it to non-obligatory properties of the latter function.

III. The Scope of Quantificational Contrastive Topics

1 Introduction

Having discussed what the concept of topicality and contrastive topichood means in various theoretical frameworks, and having investigated the presuppositions and implicatures contrastive topics give rise to, in the rest of this work we concentrate on the truth-conditional interpretation of declarative sentences containing contrastive topics. One important challenge in this area, which we will be preoccupied with for most of the time, is how to account for the tendency for quantificational contrastive topic phrases to take narrow scope with respect to at least one other operator in the sentence, for the lack of the narrow scope reading in certain other cases, and for the fact that certain quantificational contrastive topic phrases can also have a reading on which they appear to take widest scope (in addition to their narrow scope readings). In this chapter we will first critically review the proposals aiming to account for the scope of contrastive topics cross-linguistically as well as in Hungarian, and consider to what extent they are applicable to an extended set of Hungarian data. The second half of the chapter will be devoted to our proposals aiming to account for the same data.

The fact that certain classes of quantificational expressions (DPs or adverbials⁹¹) that are situated in a left-peripheral position and are pronounced with the rising pitch accent characteristic of the contrastive topic can or even must take narrow scope with respect to other quantifiers and operators in other preverbal operator positions in the Hungarian sentence was first discussed by Anna Szabolcsi and László Hunyadi (cf. Szabolcsi 1981b, Hunyadi 1981), and further studied by Kenesei (1989), É. Kiss (1987, 1992, 2000, 2002) and Alberti and Medve (2000), among others. The fact that quantificational contrastive topic phrases, which, on the syntactic analysis of the Hungarian sentence proposed by É. Kiss (2002), are situated in (one of) the highest preverbal operator positions (cf. Chapter 1) are often allowed to receive a narrow scope reading constitutes an exception to the generalization according to which the scope principle of generative grammar (that is, operators scope over the domain they c-command) is observed in visible syntax in Hungarian with respect to the preverbal operator positions (cf. É. Kiss 2002; see Szabolcsi 1997 for further discussion). (1) and (2) below illustrate two relevant examples. (1i) and (2i) provide quasi-formalizations of the readings where the contrastive topic phrase takes wide scope with respect to the operator following it, whereas (1ii) and (2ii) simulate the readings on which the former takes narrow scope.

⁹¹ In the examples to follow, the contrastive topic phrases we illustrate the scope interactions with all belong to the category DP. Adverbs of quantification with analogous semantic properties would show exactly the same scope effects.

- (1) [CT /ÖT diák] [DistP \MINden könyvet elolvasott.]
 five student every book.ACC VM.read
 ‘/FIVE students read \EVERY book.’
 i. five students > every book ii. every book > five students
- (2) [CT /LEGalább öt diák] [DistP a \LEGtöbb könyvet elolvasta.]
 at.least five student the most book.ACC VM.read
 ‘[At least /FIVE] students read \MOST books.’⁹²
 i. # at least five students > most books⁹³
 ii. most books > at least five students

(3) and (4) below illustrate the available readings for the variants of (1) and (2), respectively, where the sentence-initial quantificational expressions are pronounced with a falling tone, and, thus, are assumed to occupy the [Spec, TopP] and the [Spec, DistP] positions, respectively:

- (3) [TopP Öt diák] [DistP MINden könyvet elolvasott.]
 five student every book.ACC VM.read
 ‘There are five students that read every book.’
 i. five students > every book ii. # every book > five students
- (4) [DistP \LEGalább öt diák] [DistP \SOK könyvet elolvasott.]
 at.least five student many book.ACC VM.read
 ‘There are at least five students that read many books.’
 i. at least five students > many books
 ii. # many books > at least five students

The following variant of (2) shows that the scope relations do not depend on the grammatical case of the contrastive topic DP, only on the semantic properties of the two determiners:

- (5) [CT /LEGalább két könyvet] [DistP \MINden diák elolvasott.]
 at.least two book.ACC every student VM.read
 ‘[At least /TWO] books were read by \EVERY student.’
 i. # at least two books > every student
 ii. every student > at least two books

The following example illustrates that contrastive topic phrases do not only take wide scope with respect to accented quantificational expressions in [Spec, DistP],

⁹² Within the English translations, square brackets are introduced to mark contrastive topics proper whenever they include a string instead of the pitch-accented word alone.

⁹³ Note that in the German counterpart of (2), shown in (i) below, the contrastive topic DP can receive a wide scope reading whenever its pitch accent falls on the number word (Cornelia Ebert, p. c.):

i) Mindestens /FÜNF Studenten haben die \MEISten Bücher gelesen.
 at least five students have the most books.ACC read
 ‘At least /FIVE students read \MOST books.’

but also with respect to the preverbal focus, or, more precisely, the exhaustive/identificational operator that is part of the meaning of the constituent in [Spec, FP]:

- (6) [CT /HÁrom könyvet] [FP \János olvasott el.]
 three book.ACC John read VM
 ‘/THREE books were read by \JOHN.’
 i. three books > Focus ii. Focus > three books⁹⁴

The following pair of examples shows that sentences where the initial quantificational DP is situated in [Spec, DistP] position and is thus pronounced with a falling pitch accent versus those where the same DP bears a rising pitch accent and thus plays the role of the contrastive topic phrase can contrast in grammaticality:

- (7) a.* [DistP \MINden diák] [NegP nem késett el az óráról.]
 every student not was.late VM the class.from
Intended: ‘Every student was not late for class.’ (every student > ¬)
- b. [CT /MINden diák] [NegP \NEM késett el az óráról.]
 every student not was.late VM the class.from
 ‘/EVEry student was \NOT late for class.’
 i. # every student > ¬ ii. ¬ > every student

The well-formed affirmative counterpart of (7a), shown in (8a), however, becomes ungrammatical when the universal DP is pronounced with the contrastive topic intonation, as shown in (8b):

- (8) a. [DistP \MINden diák elkésett az óráról.]
 every student VM.was.late the class.from
 ‘Every student was late for class.’
- b.* [CT /MINden diák] \ELkésett az óráról.
 every student VM.was.late the class.from
Intended: ‘Every student is such that he/she was late for class.’

In the framework of the proposal made in Chapter 2, the ill-formedness of (8b) can be attributed to the fact that the intended truth conditional meaning of the sentence contradicts the presuppositions that the contrastive topic is expected to introduce: given the truth of the proposition representing the intended truth-conditional content of the sentence, namely, that it holds for all students that they were late for

⁹⁴ Given that the scope interaction is between the exhaustive/identificational operator and the contrastive topic DP, the paraphrases of the i) and ii) readings of this example, would be the following: i) *As for three of the books, John was the person who read them*, and ii) *John was the person who read three of the books*.

respect to a contrastive topic and a scope-bearing expression following it, or between two postverbal quantifiers. In Section 2 below we give an overview of some proposals worked out for English and German that either aim to account for the preferred narrow scope readings of sentence-initial quantificational expressions (not necessarily contrastive topics) with respect to sentential negation in general, or for the narrow scope readings of contrastive topic phrases with respect to an operator following them in the sentence (in most cases, sentential negation) in particular, and examine whether they could account for the Hungarian data reviewed above as well. In Section 3 we look at three interrelated previous proposals made specifically for Hungarian, namely, É. Kiss (2000), Alberti and Medve (2000), and É. Kiss and Gyuris (2003), which start from the assumption that contrastive topic DPs are capable of denoting properties. In Section 4 we consider the possibility of accounting for the scope of contrastive topics based on the structure of discourses where they can appear, as proposed by Büring (2003). Section 5 presents a more systematic set of Hungarian data that an adequate theory aiming to account for the scope properties of quantificational contrastive topics should be able to handle. Section 6 introduces three other possible strategies in terms of which the narrow scope readings of quantificational contrastive topics in Hungarian could be explained, argues for one of them, and shows how it can account for missing readings of well-formed Hungarian sentences, and for the fact that certain sentences that do not seem to violate any syntactic requirement fail to have an interpretation in this language. Section 7 summarizes the results of the chapter.

2 Previous accounts for English and German

2.1 Ladd (1980)

Ladd (1980) provides an account of how the intended reading of (11) below arises, where the sentence-initial quantificational expression is pronounced with a fall-rise contour:

- (11) \checkmark All the men didn't go.
 'Not all men went.'

(Ladd 1980)

To avoid misunderstandings, we have to note that Ladd himself did not claim that the fall-rise contour marks a contrastive topic in the case of (11). The reason why we are including the discussion of his treatment of (11) here is that this marked intonation pattern evokes the same kind of scope-reversal that we have observed with respect to Hungarian contrastive topics in the previous section. Ladd's proposal regarding the interpretation of (11) is based on the idea that the fall-rise contour has a particular meaning associated with it, namely, that it generally signals a subset or hyponym relation to a contextually accessible set. For example, in the discourse below, the utterance of (12b) evokes a set of entities, e.g. the set of cars,

or the set of German cars, which the denotation of *Opel* could be a subset of, making the exchange coherent, as the paraphrase of the sentence in parentheses indicates:

- (12) a. You have a VW, don't you?
 b. I've got an √Opel. (Well, not exactly, but...)

(Ladd 1980)

Ladd argues that in the case of example (11), the fall-rise contour triggers the same type of subset interpretation as in (12). He considers this subset relation to be semantically incompatible with the universal quantifier, since *all* cannot pick out a proper subset (nor can *both*) of the set referred to by the noun following it. Therefore, he claims, “the sentence is essentially reprocessed with the tacit caveat ‘All can't be subset, so it must mean *not all*’.” (Ladd 1980: 161).

Although the approach seems to work fine for predicting the scope interaction between contrastive topics and negation, the fact that it assumes scope reversal to be the result of a kind of repair strategy, when the interpretation corresponding to the surface order of operators becomes unavailable for some reason, makes it difficult to extend it to sentences containing other quantifiers. As far as I can see, the strategy is even contradicted by some standard English examples with multiple quantifiers. A sentence like (13) has two equally available interpretations, which differ from each other in the relative scopes of the quantifiers, which does not seem to be compatible with the idea that scope orders showing a lack of parallelism with surface order only arise when preserving the parallelism becomes impossible for some reason:

- (13) Every man loves a woman.

As (10) above and its German counterpart in (14) indicate the approach cannot be extended to explain why narrow scope readings for quantificational expressions as contrastive topic phrases exist that can also have a wide scope reading:

- (14) Zwei /DRITTEL der Politiker sind NICHT\ korrupt.
 two thirds of politicians are not corrupt
 ‘Two /THIRDS of the politicians are NOT\ corrupt.’
 i. two-thirds of politicians > ¬ ii. ¬ > two-thirds of politicians
 (Büring 1997: 133)

This closes our discussion of Ladd's (1980) proposal for generating inverse scope readings for certain prosodically marked quantificational expressions in English.

2.2 Horn (1989)

Horn's (1989) theory is not concerned specifically with the scope of the contrastive topic but with the possibilities of reversing the scope of subject quantifiers with that of sentential negation in general. The reason why we discuss it here is that in a

significant number of naturally occurring examples that contain quantificational contrastive topic phrases in different languages, these expressions are followed by sentential negation, and interpreted as having narrow scope with respect to the negation. Therefore, it appears possible that Horn's suggestions for explaining the data he is concerned with are relevant to explaining the narrow scope readings of quantificational contrastive topics as well.

According to Horn (1989: 496), "the wide-scope (NEG-Q) reading of negation in sentences with quantified subjects occurs most naturally in metalinguistic uses." He claims that the availability of NEG-Q readings for English sentences with quantified subjects like (15a) and (16a) depends on whether the quantifier is a universal or an existential one:

- (15) a. Everybody didn't come.
 b. Not everybody came.
- (16) a. Somebody didn't come.
 b. Nobody came.

Horn suggests that the primary reading of sentences with at least two operator expressions that are pronounced with a neutral intonation pattern is the one where the operators take scope according to their surface positions. Inverse scope readings are also possible, but these are blocked on the basis of the Division of Pragmatic Labor if there are other forms available in the language that express the inverse scope reading. This applies to (15a) and (16a), too, as far as their ability to express NEG-Q meanings is concerned, since there are forms in the language, shown in (15b) and (16b), which express the intended meaning, and where, in addition, the scope of operators correlates with surface order. The strength of the blocking effect varies inversely with the markedness of the alternative expressions. Since *not everybody* in (15b) is morphologically and syntactically more marked than *everybody*, Horn argues that (15a) will only be blocked weakly as a means of expressing the NEG-Q meaning.

The English sentence in (17a), which is ambiguous regarding the scope of the two operator expressions, with or even without a rising pitch accent on the subject, constitutes a problem for this theory as well, however, since there is a truth-conditionally identical form available in the language that expresses the inverse scope reading, shown in (17b), which does not seem to be syntactically or morphologically more complex as the form in (17a):

- (17) a. Two-thirds of the politicians are not corrupt.
 b. At most one third of the politicians are corrupt.

Given the latter difficulty, it seems that the principles Horn's theory is based on cannot be applied successfully for explaining why quantificational contrastive topics DPs can receive a narrow scope reading in various languages. Given that the meaning of sentences where both the contrastive topic and the other quantifier are

DPs cannot have synonymous counterparts that contain one quantificational DP uniting the effects of the two quantificational DPs in the original sentence, examples having the structure as in (1)–(2) and (5)–(6) would present further difficulties for the approach proposed by Horn (1989).

2.3 De Swart (1998)

De Swart (1998) argues that the readings on which sentential negation takes wide scope with respect to a quantifier in subject position in an English sentence need “to be pragmatically motivated by the contribution the utterance makes to the discourse” (p. 89), since such readings express essentially negative facts about the world, the number of which is, naturally, much larger than the number of true positive facts about the world, as claimed in Horn (1989). In addition, given that readings where negation receives wide scope over the subject also induce a discrepancy between the syntactic and the semantic scope of an expression (since the syntactic scope of negation in English is generally smaller than the whole sentence⁹⁶), they need to be motivated by the fact that the reading in question adds informational value to the sentence, e.g. entails a positive statement or introduces a positive implicature.

Given these preliminaries, de Swart (1998) explains the possibility of assigning wide scope to the negation with respect to the universal quantifier in (18) along the following lines:

(18) All students didn’t pass the exam.

First, the reading of (18) where negation receives wide scope corresponds to a universal statement under negation, paraphrased in (19a). This is equivalent to an affirmative sentence where negation takes narrow scope, that is, to one that expresses a positive fact, as in (19b):

- (19) a. Not all students passed the exam. \Leftrightarrow
 b. Some students didn’t pass the exam.

Second, the relevant reading of (18) also gives rise to a positive implicature, derived as follows. As proposed by Horn (1972), the combination of the Gricean maxims Quality and Quantity leads to systematic implicatures based on items ordered on a scale (referred to as *Horn scales* in the literature) in such a way that the truth of a statement containing the weaker item implicates the falsity of any corresponding statement containing stronger items. For example, $\langle a, all \rangle$ constitutes such a scale, since, if a sentence containing *a* or *some* is uttered, the implicature (marked by ‘ \sim ’ below) arises that a corresponding statement where *all* replaces *a* or *some* cannot be true. Thus, (20a) below implicates (20b):

⁹⁶ In fact, this is probably true for a significant number of languages.

- (20) a. Some students passed the exam. \sim
 b. Not all students passed the exam.

The embedding of the scale $\langle a, all \rangle$ under negation results in the scale $\langle not\ all, not\ a \rangle$. The weaker assertions with respect to this scale are those that contain the quantifier *not all*. Thus, a statement with *not all*, like that in (21a), implicates the negation of a corresponding statement with *not a*, as in (21b), which in turn is equivalent to the statement in (21c).

- (21) a. Not all students passed the exam. \sim
 b. It is not the case that not a student passed the exam. \Leftrightarrow
 c. Some students passed the exam.

(21c) is thus the second positive statement evoked by the inverse scope reading of (18), strengthening the motivation that the sentence should be associated with the latter reading.

According to de Swart, upward monotonic determiners like *more than two* or *many* appearing together with sentential negation can induce positive assertions in a similar way, with the help of the scales $\langle more\ than\ zero, more\ than\ one, \dots, more\ than\ n-1, more\ than\ n \rangle$, or $\langle few, many \rangle$.

The theory proposed by de Swart accounts for the fact why sentences containing the determiner *few* followed by sentence negation as in (22) and (23) do not have inverse scope readings:

- (22) Few people are unlikely to arrive on time.
 (23) Few students did not pass the exam.

Since the pragmatic scale containing *few* is $\langle few, many \rangle$, which, embedded under negation, becomes $\langle not\ many, not\ few \rangle$, the inverse scope readings of (22)–(23) above do not trigger scalar implicatures, since the expressions contained in them are associated with ‘strong’ propositions (the ones containing expressions situated at the ‘strong’ end of the scale), which cannot implicate the negation of the weaker statement.

Although the principles proposed by de Swart seem to be able to explain how the narrow scope reading for contrastive topic phrases with respect to sentential negation arises in Hungarian, it does not follow from the account why the operation of these principles should be connected to the presence of the rising pitch accent. If we ignore the latter difficulty, the theory can also account for the fact that the contrastive topic phrase cannot take narrow scope with respect to the negation in the following Hungarian example (cf. reading ii).

- (24) *_[CT] /KEvés ember] \NEM jött el.⁹⁷
 few person not came VM
 ‘/FEW people \DIDN’T come.’
 i. # few people > ¬ ii. # ¬ > few people

The explanation is based on the assumption that *not few* constitutes the stronger element in the scale <*not many, not few*>, thus, the sentence cannot trigger a positive statement in the form of a scalar implicature. (The fact, however, that the counterparts of (24) in German and English are considered well-formed, cf. footnote 6, calls this kind of explanation into question.)

De Swart’s theory, however, cannot be extended in any predictable way to account for the existence of the narrow scope reading for the contrastive topic phrase in sentences where the latter is followed by a lexical focus:

- (25) [_{CT} /PONtosan két diák] [_{FP} a \HAMletet olvasta el.]
 exactly two student the Hamlet.ACC read VM
 ‘Exactly /TWO students read \HAMlet.’
 i. # exactly two students > Focus ii. Focus > exactly two students

The denotation of the contrastive topic phrase of (25) cannot be an element of a Horn scale, since the truth of a proposition expressing that a property holds for exactly two students can neither implicate nor be implicated by the fact that the same property holds of a different number of individuals.

2.4 Jacobs (1997)

One aspect of Jacobs’ (1997) theory on German contrastive topics, or, *I-topics* in his terminology, was already discussed in Chapter 2, namely that these constituents cannot occur in answers to conjoined questions. We now concentrate on the author’s claims about the origin of the narrow scope readings for quantificational I-topics, like the one found in the following example:

- (26) √_{ALL}e Grass-Romane kann man \NICHT empfehlen.
 all Grass-novels can one not recommend.INF
 ‘It’s not the case that all novels by Grass could be recommended.’
 (Jacobs 1997: 94, glosses and translation added)

Jacobs (1997: 92–93) argues that quantificational I-topics obligatorily take narrow scope with respect to the other operator(s) following them in the sentence, and this feature is automatically derived from some essential properties of the construction itself. These include the fact that I-topicalization is only possible in

⁹⁷ Note that just as the English translations of the sentence, its German equivalent given in (i) below is also interpretable (Ch. Piñón and H.-M. Gärtner, p.c.):

(i) /WENige Personen sind \NICHT gekommen.
 few people are not arrived
 ‘/FEW people \DIDN’T arrive.’

assertive or directive sentences in German,⁹⁸ which indicates, according to him, that I-topicalization is connected to a particular illocutionary force. He claims that the functional head spelling out the properties of the construction introduces an illocutionary operator, referred to by him as $\text{ASSERT}^{\text{IT}}$, and transforms the whole comment part of the sentence into a predicate (PRED), which then takes the topic part (TOP), i.e. the constituent bearing the fall-rise intonation contour, referred to by Jacobs as the *root contour*, as its argument. The semantic value of a sentence with an I-topic is thus derived as follows:

$$(27) \quad \llbracket \text{ASSERT}^{\text{IT}}(\text{TOP})(\text{PRED}) \rrbracket_{\text{prop}} = \llbracket \text{PRED} \rrbracket (\llbracket \text{TOP} \rrbracket)$$

(Jacobs 1997: 112)

As sentence negation is part of the meaning of PRED, it necessarily takes the contrastive topic in its scope, which results in scope inversion with respect to the surface order of the operators.

Although the application of the above approach to Hungarian contrastive topic phrases correctly derives the narrow scope readings (that is, the ii)-readings) for the examples illustrated in the previous section, it leaves the fact unexplained that there are quantificational contrastive topic phrases that can also have a wide scope reading with respect to the linearly second operator, as in (1), (6), (9a,b) and (10) above. Jacobs argues that whenever the root contour falls on indefinite determiners of noun phrases having a specific interpretation, we arrive at a different construction he calls *I-specification*, illustrated in (28):

$$(28) \quad \sqrt{\text{Ein Werk von Grass hat Reich-Ranicki \textbackslash NICHT verrissen.}}$$

one work of Grass have Reich-Ranicki not pulled.to.pieces

‘One work by Grass Reich-Ranicki did not criticize severely.’

(Jacobs 1997: 109, glosses and translation added)

According to Jacobs, I-specification constructions are to be recognized on the basis of the fact that the contrasting statements they evoke do not contain alternatives to the determiner but to the whole noun phrase denotation, in the sense that they encode alternative ways of referring to the same individual that the noun phrase was also supposed to identify. He illustrates the claim with the contrast between the acceptability of (29a) versus (29b) as continuations of (28):

$$(29) \quad \text{a. ... n\u00e4mlich die “BLECHtrommel”.$$

namely the tin drum

‘... namely, The Tin Drum.’

⁹⁸ As it was shown in Chapter 1, this claim does not hold for Hungarian.

- b. ?... aber MANche Werke HAT er verrissen.
 but some works have he pulled to pieces
 ‘... but some works he did severely criticize.’

(Jacobs 1997: 109, glosses and translation added)

There are two facts that call into question whether Jacobs’ account could be adopted for Hungarian. On the one hand, there is a legitimate continuation of the Hungarian version of (28), illustrated in (30a), with a contrasting statement shown in (30b), in which the accented determiner is replaced by a different one that does not refer to the same individual as the one referred to by the sentence-initial DP in the previous sentence:

- (30) a. [_{CT} /EGY könyvet] \MEGkritizált János.
 one book.ACC VM.criticized John
 ‘/ONE book \WAS criticized by John.’
- b. De [_{CT} /KÉT könyvet] \NEM.
 but two book.ACC nem
 ‘But /TWO books were \NOT.’

On the other hand, in Jacobs’ framework one has to assume that the two possible readings of (1), (6), (9a, b) and (10) above are associated with two distinct syntactic analyses of the same surface string, which is difficult to bring in accordance with Hungarian data, given that there are no syntactic tests by means of which two structures could be postulated for the latter examples. Moreover, as shown in Chapter 1, and argued independently by Molnár and Rosengren (1996), the appearance of contrastive topics in Hungarian is not restricted to sentence-types associated with a particular illocutionary force. In particular, contrastive topics are just as acceptable in interrogative sentences as in declaratives.⁹⁹

2.5 Krifka (1998)

Krifka (1998) offers a solution to the problem of what makes inverted scope readings available for contrastive topics in German that crucially relies on the syntactic analysis of the relevant examples. (31) is an illustration of the type of constructions under consideration:

- (31) Mindestens /EIN Student hat \JEden Roman gelesen.
 at least one student.NOM has every.ACC novel read
 ‘At least one student has read every novel.’ $\forall(\exists), \exists(\forall)$

(Krifka 1998: 80)

⁹⁹ Tomioka (2008) shows that in Japanese, contrastive topics also appear in a variety of sentence-types (including interrogatives and imperatives) that express a wide range of speech acts.

Krifka's account is based on two main assumptions. The first one is the scope assignment principle proposed by Frey (1993) for German S-structure : "If α , β are operators occurring in a sentence S, then S has a reading in which α has scope over β iff i) α c-commands β , or ii) α c-commands a trace of β ." (Krifka 1998: 76) The second one is the assumption that a clause-initial constituent carrying the rise in a rise-fall contour is a 'focus in topic', i.e. a constituent moved from a preverbal position, where focus is assigned to it, into topic position (focus can be assigned prior to movement). (31') below indicates how the movement of the contrastive topic and the focus constituents in the sentence illustrated above takes place by showing the traces these constituents leave behind:

- (31') [CP [mindestens ein Student]_{F,3} [C' hat₁ [[jeden Roman]_{F,2}
[t₃ [t₂ [gelesen]]] t₁]]]
'At least one student has read every novel.' $\forall(\exists), \exists(\forall)$
(Krifka 1998: 86)

As pointed out in É. Kiss and Gyuris (2003), however, neither of the above assumptions hold with respect to Hungarian. First, in this language, the operators proposed into A-bar positions dominating the VP originate from VP-internal positions, and thus they all c-command the traces of their clause-mates. This means that if Krifka's approach was to be adopted for Hungarian, it would predict the relative scopes of the preverbal operators to be free, which, as discussed above, is not the case. Second, the movement of a contrastive topic through [Spec, FP] and then the subsequent filling of [Spec, FP] by another constituent in the Hungarian sentence would violate the strict cycle condition. (Naturally, the syntactic and semantic features of the so-called focus positions in the two languages also differ from each other significantly.) Third, there are various types of constituents that can function as contrastive topic phrases in Hungarian, but cannot occupy the [Spec, FP] position, like universal DPs or existential DPs containing a determiner of the *vala*- 'some-' type.

There is one additional fact that makes accounts of the scope-taking properties of contrastive topic phrases containing modified numeral determiners in Hungarian and German, as illustrated in (5) vs. (31) above, almost impossible to compare: this is the fact, discussed in Chapter 1, that whereas stressing the leftmost word of a modified determiner in Hungarian, as in (5), can both indicate contrast on the accented word and on the whole determiner, in German, contrast on the whole determiner can only be indicated by accenting the numeral, which, however, can always be interpreted as if only the denotation of the numeral was meant to be contrasted with its alternatives.

Having discussed some of the existing accounts for inverse scope readings in English and German in general and for the narrow scope readings of quantificational contrastive topics in particular, and having established that the proposals they make cannot be applied to the Hungarian data, we turn now to the investigation of three previous proposals made specifically for Hungarian.

3 Previous accounts for Hungarian

3.1 Alberti and Medve (2000)

Alberti and Medve argue that a sentence-initial quantificational DP pronounced with the contrastive topic intonation moves to the specifier position of a projection called CTopP, which is associated with specific interpretational properties: although the operator head of the projection, op_{CTop} , has the widest scope among the operator heads, its specifier is obligatorily interpreted collectively, that is, as referring to a set or a plural individual, illustrated in (32), or to a kind, illustrated in (33):

- (32) [_{CTopP} /MINDhárom fiúnak_j op_{CTop} [_{FP} \MArit_i mutattam_k
all.three boy.DAT Mari.ACC introduced.1SG
[_{VP} t_k be pro t_i t_j.]]]
VM
'To /ALL the three boys I introduced \MAry.'
(Alberti and Medve 2000: 113, intonational marking added, translation altered)

- (33) [_{CTopP} /PONtosan három fiúnak csak \MArit és \ZSUzsit
exactly three boy.DAT only Mari.ACC and Zsuzsi.ACC
mutattam be.]
introduced.1SG VM
'To exactly /THREE boys I introduced only \MAry and \SUzy.'
(Alberti and Medve 2000: 113, intonational marking added, translation altered)

Alberti and Medve (2000) believe that whenever the [Spec, CTopP] position is filled by a quantificational DP capable of denoting a unique set (that is, has a unique witness set), as the sentence-initial DP in (32), it is part of the truth conditions of the sentence that the property denoted by the predicate applies to the latter set, and, additionally, that the same property does not hold for all subsets of the same set. (Unfortunately, they fail to show what component of the syntactic structure this feature would be connected to.) Thus, according to the authors' view, (32) is true whenever the maximal set of boys in the universe of discourse, consisting of three boys, is such that only Mary was introduced to it collectively, but there is at least one subset of this set a different individual was (also) introduced to.

In Alberti and Medve's view, sentence (33) is an instance of predicating of entities that belong to a kind. They paraphrase its meaning as follows: "as for the kind of sets consisting of exactly three of the relevant boys, only Mary and Susan were introduced to this set kind" (p. 114). The fact that the identity of the boys can vary for Mary and Susan is then attributed to the assumption that only about

manifestations of a kind can we make a statement to the effect that they were introduced to someone.

I believe that the claim by Alberti and Medve (2000) according to which the apparent narrow scope of contrastive topics is due to the fact that such constituents do not denote entities but sets or properties is an innovative one. However, it is difficult to evaluate the strengths and weaknesses of the proposal on the basis of the information provided in the paper, given that the authors do not offer a compositional procedure for deriving the meanings of whole sentences on the basis of the principles proposed. In É. Kiss and Gyuris (2003), discussed below, one possible way of using the above ideas to generate the meaning of sentences compositionally is presented, where the problems with the approach also become more apparent. Before turning to this paper, however, we sum up the results of É. Kiss's (2000) work, which takes Alberti and Medve's proposals one step further.

3.2 É. Kiss (2000)

The central idea of É. Kiss's account of the narrow scope reading of contrastive topic phrases is that contrastive topic DPs denote properties of sets that are individuated as a result of being contrasted with other properties. The idea that the denotations of property-expressions are individuated due to being contrasted originates from Szabolcsi (1983), who analysed the interpretation of focused bare nominals, illustrated in (34):

- (34) [F Biciklit] látott Mari.
 bicycle.ACC saw Mary
 'It was a bicycle/bicycles that Mary saw.'

(Szabolcsi 1983: 131)

According to Szabolcsi, given that preverbal focusing in Hungarian involves exhaustive listing, that is, the truth of a sentence with a focus entails that the predicate does not hold of any alternative of the focus denotation, in order to explicitly characterize the truth conditions of sentences containing focused property-denoting expressions, one needs to know the alternatives the focus denotation is contrasted with. Thus, for being able to determine the interpretation of a sentence with a focused bare noun like (34), it is necessary to identify a relevant set of distinct properties that the property of being a bicycle can reasonably be contrasted with.

É. Kiss (2000) goes two steps further: first, she assumes that the same process of individuation takes place when property-denoting expressions serve as contrastive topics, since the interpretation of the latter constituents also requires contrast to alternative denotations, and second, she argues that quantificational expressions playing the contrastive topic role become eligible for denoting a property of sets. In her view, the contrastive topic phrase in (35) denotes a property of a set relating to its cardinality (which is assumed to be contrasted with other properties). This explains why the set of novels read can vary together with the students, giving rise to the narrow scope reading for the contrastive topic phrase:

- (35) [CT /MINden regényt] [FP \KEvés diák olvasott el.]
 every novel.ACC few student read VM
 ‘/EVERY novel was read by FEW\ students.’

Given that the theory attributes the ability of contrastive topic phrases to denote properties to the necessity of their being contrasted with alternatives, it is not obvious why quantificational noun phrases cannot denote properties in focus position as well, and if the apparent narrow scope reading is the consequence of the contrastive interpretation, why focused noun phrases cannot take narrow scope with respect to the quantifiers following them in the sentence.

The next section will discuss how a compositional semantic interpretation can be built on the assumption that contrastive topic phrases denote properties due to their syntactic position, and where the limits of such an approach lie.

3.3 É. Kiss and Gyuris (2003)

The paper by É. Kiss and Gyuris (2003) proposes a compositional interpretation procedure for deriving the meaning of sentences containing quantificational contrastive topic phrases on their narrow scope readings based on two crucial assumptions. The first of them is that even full DPs can denote properties if they are situated in the topic position, as opposed to DPs in other preverbal operator positions (which are normally assumed to denote generalized quantifiers), and the second is that the denotation of the predicate part of the sentence has to be able to combine with a property-type argument. The reading of (36) below represented in (36ii) is then derived as follows:

- (36) [CT /KÉT könyvet] [DistP \MINdenki elolvasott].
 two book.ACC everybody VM.read
 ‘/TWO books were read by \EVERYbody.’
 i. two books > everybody ii. everybody > two books

The contrastive topic DP denotes a property of sum individuals, the property of falling into the denotation of *book* and having at least two atomic parts. In an extensional framework, this is identical to saying that the contrastive topic phrase denotes a set of sum individuals in the denotation of *book* that have at least two atomic parts. The approach can thus be considered a follower of the so-called *adjectival theory* to describing the meaning of DPs, advocated for particular DPs by Verkuyl (1981) and Link (1987, 1991, 1998), to be discussed below. Link (1998: 70) formulates the idea as follows: “[t]he numerals ‘1’, ‘2’, ‘3’, . . . , are adjective-like modifiers that pick out all those i-sums in an NP-extension which have the indicated number of atoms.”

The claim that quantificational contrastive topic DPs have a property-denotation has the consequence that (given that such contrastive topic phrases can express arguments of the verb, and that they can also be followed by the VP provided that it has the required prosody) all verbs in the language can be analysed as predicates over property denotations, where the property can correspond to any argument of

the verb (given that subjects and objects are equally available for the contrastive topic role), instead of assuming that the meaning of the verb can be represented as an n-place predicate expression in the logical metalanguage, illustrated for two-argument verbs in (37). In (38), two possible ways of lifting the type of (37) in the manner described above are shown, which differ as to whether it is the subject or the object argument that is expressed by the contrastive topic DP:¹⁰⁰

$$(37) \quad \lambda y_e \lambda x_e \mathbf{verb}(y)(x)$$

$$(38) \quad \begin{array}{l} \text{a. } \lambda x_e \lambda P_{\langle e, t \rangle} \exists y [\mathbf{verb}(y)(x) \wedge P(y)] \\ \text{b. } \lambda y_e \lambda P_{\langle e, t \rangle} \exists x [\mathbf{verb}(y)(x) \wedge P(x)] \end{array}$$

One of the problems the proposal runs into is related to the way the narrow scope readings of downward monotonic and non-monotonic DPs as contrastive topic phrases, illustrated below, are derived:

$$(39) \quad \begin{array}{ll} [\text{CT} / \text{PONtosan két filmet}] & [\text{FP} \setminus \text{PÉter látott.}] \\ \text{exactly two movie.ACC} & \text{Peter saw} \\ \text{'Exactly /TWO movies were seen by PÉter.'} & \\ \text{i) \# exactly two movies > Focus} & \text{ii) Focus > exactly two movies} \end{array}$$

To see the nature of the problem, consider the formalization of the meaning of the FP of (39) in (40a), which follows Kenesei's (1986) and (1989) proposal for representing the meaning of the preverbal focus in Hungarian as expressing identification (also endorsed by Szabolcsi 1994, who extends the formalization to all quantificational DPs in focus),¹⁰¹ the representation of the $\langle e, t \rangle$ -type denotation for the contrastive topic DP in (40b), and the combination of the latter two into the sentence denotation by functional application in (40c):

$$(40) \quad \begin{array}{l} \text{a. } \llbracket \text{FP} \rrbracket = \lambda Q. \iota x \exists y (\mathbf{saw}(x, y) \wedge Q(y)) = \mathbf{p} \\ \text{b. } \llbracket [\text{CT} / \text{PONtosan két filmet}] \rrbracket = \lambda z. \mathbf{exactly-two-movie}(z) \\ \text{c. } \llbracket (39) \rrbracket = \lambda Q. (\iota x \exists y (\mathbf{saw}(x, y) \wedge Q(y)) = \mathbf{p}) (\lambda z. \mathbf{exactly-two-movie}(z)) = \\ \quad = \iota x \exists y (\mathbf{saw}(x, y) \wedge \mathbf{exactly-two-movie}(y)) = \mathbf{p} \end{array}$$

Intuitively, the Hungarian sentence in (39) means that it is Peter who saw a sum of films with exactly two atomic parts. (40c), however, due to the presence of the existential quantifier, introduced by the verb (cf. (38a, b)) is only true if it is Peter for whom there exists a sum of films with exactly two atomic parts that he saw. This formula does not exclude the possibility of there being a larger sum of films

¹⁰⁰ The formulae are based on Komlósy's (1992) suggestions for representing the meaning of verbs taking bare nominal arguments in Hungarian, and on van Geenhoven's (1996) proposal for representing the meaning of verbs in West Greenlandic Eskimo.

¹⁰¹ Here we leave out the steps of getting from a (38a)-style representation of the meaning of the verb to the representation of the meaning of the FP in (40a).

that Peter saw that the latter sum is only a part of, which is definitely excluded by the meaning of the Hungarian sentence (39) itself.

The second problem concerns the fact that the approach, given that it builds the property variable into the formalization of the meaning of the verb, predicts that a quantificational contrastive topic phrase will have to take minimal scope among all the operators in the sentence. The fact that the following example can express both of the readings characterized in i) and ii) (suggested by A. Szabolcsi, p.c.) shows, however, that although contrastive topic phrases take narrow scope with respect to the operator in predicate-initial position, they do not need to take narrow scope with respect to the quantificational expressions situated postverbally as well:

- (41) [CT/LEGalább két könyvet] [FP \PÉter mutatott meg mindenkinek.]
 at.least two book.ACC Peter showed VM everybody.DAT
 ‘At least /TWO books were shown by \PEter to everyone.’
 i. Focus > at least two books > everybody
 ii. Focus > everybody > at least two books

Thus, (41) can be interpreted in at least two ways, where the scope order in i) corresponds to that reflected in the English paraphrase *It was Peter for whom there was at least two books he showed to everyone*, and the one in ii) to *It was Peter who showed at least two, possibly different, books to everyone*, the latter of which cannot be predicted by the approach discussed above. In the next section we take a look at the issue of whether the scope of contrastive topics cross-linguistically can be explained by considering what discourse structure they can appear in.

4 The scope of the contrastive topic in relation to the structure of the discourse

In the previous section we found that some of the recent proposals for German and English that aim to account for the narrow scope readings of sentence-initial quantifiers with respect to sentence negation in general or for the narrow scope readings of quantificational contrastive topic phrases with respect to an operator following them in particular cannot be extended to cover all the relevant Hungarian examples, and that the proposals put forth for Hungarian so far cannot deal with the whole range of data either. The proposals considered above all relied on the assumption that the fact whether a particular scope reading is available for a sentence containing a contrastive topic is a matter of the syntactic structure of the relevant sentences, the lexical meanings of the constituents, and the way they are combined together. In this section we wish to explore the predictions of a different approach suggested by Büring (2003), according to which the availability of a particular reading for a declarative containing a contrastive topic depends on what kind of discourse structure it can fit in. He argues that the truth-conditions of a particular potential reading must be compatible with the presuppositions introduced by the contrastive topic (which are related to the structures of dialogues they can appear in). As already discussed in Chapter 2, Büring (2003) claims, on the one

hand, that felicitous discourses consisting of question(–subquestion–)answer sequences can be mapped onto well-formed d-trees and, on the other hand, that the appearance of a contrastive topic in a declarative presupposes the presence of a strategy. In this section, we review how this general idea is utilized by Büring (2003) to account for missing readings of sentences with quantificational contrastive topics and negation, and point out some problems with it.

4.1 The outlines of Büring’s (2003) account

Consider the following dialogue, where quantificational determiners are pronounced with the contrastive topic intonation in answers to the subquestions of a root question:

- (42) Q: How many (of the 74) abstracts got accepted?
 SQ1: Did any abstracts get accepted?
 A1: (Yes,) SOME_{CT} abstracts DID_F get accepted.
 SQ2: Did most abstracts get accepted?
 A2: (Yes,) MOST_{CT} abstracts DID_F get accepted.
 (Büring 2003: 533)

According to Büring (2003: 533), the CT-values of (42A1) and (42A2) are as shown in (43):

- (43) $\llbracket (42A1) \rrbracket^{ct} = \llbracket (42A2) \rrbracket^{ct} = \{ \{ Q \text{ abstracts got accepted} \} \mid Q \in D_{\langle et, t \rangle} \} \approx \text{Did X abstract get accepted?}^{102}$

Consider now the infelicitous exchange in (42SQ3–A3):

- (42) SQ3: Did all the abstracts get accepted?
 A3: # (Yes,) ALL_{CT} the abstracts DID_F get accepted.
 (Büring 2003: 533)

Büring claims in any well-formed d-tree, the node corresponding to the question in (42SQ3) is a sister to the nodes corresponding to the questions (42SQ1) and (42SQ2), situated in the same d-tree, since they are all elements of the (identical) CT-values of (42A1) and (42A2), and, therefore, the former is also a subquestion of (42Q) in any appropriate d-tree. (42A3) expresses a proposition constituting a complete answer to (42SQ3), and therefore the pair (42SQ3)–(42A3) would fit into the same discourse structure as (42Q)–(42SQ1)–(42A1)–(42SQ2)–(42A2). The reason why (42A3) still does not have an interpretation, according to Büring, is that it provides a complete answer not only to the subquestion dominating it, but also to

¹⁰²

Note that Büring (2003) represents polarity questions by singleton sets (Büring 2003: 533, fn. 15). In a theory where questions denote the set of their possible answers (cf. Hamblin 1973), the CT-value for (42A1, A2) would be as in (i):

(i) $\{ \{ f(Q \text{ abstracts got accepted}) \mid f \in \{ \lambda p.p, \lambda p.\neg p \} \} \mid Q \in D_{\langle et, t \rangle} \} \approx \text{Did X abstract get accepted?}$

the main question, (42Q), and, therefore, fails to indicate a strategy, which contradicts the presuppositions of contrastive topics.

He argues, furthermore (Büring 2003: 534, fn. 16), that an explanation for the asymmetry between the acceptable (and unambiguous) German negative sentence in (44A1) and its non-acceptable positive counterpart in (44A2) can be given along similar lines:

- (44) A1: ALLE_{CT} Politiker sind NICHT_F corrupt.
 All politicians are not corrupt
 A2: *ALLE_{CT} Politiker SIND_F corrupt.
 All politicians are corrupt

Büring suggests that both (44A1) and (44A2) indicate a strategy that contains subquestions having the form shown in (45a), which need to be dominated in any appropriate d-tree by the root question shown in (45b):

- (45) a. Are X politicians corrupt?
 b. How many politicians are corrupt?

Büring argues that since the only potentially available reading of (44A2) provides a complete answer not only to a subquestion of the form in (45a) but also to the root question in (45b), it contradicts the presuppositions introduced by the contrastive topic, and thus the sentence becomes unacceptable. (44A1) also provides a complete answer to the same root question on the reading where it expresses the proposition ‘All politicians are non-corrupt’, and this is the reason why this reading will not be available for the sentence. The reading on which (44A1) expresses the proposition ‘Not all politicians are corrupt’, does not provide a complete answer to (45b), and, therefore, will be available. This explanation, however appealing, runs into problems, which are discussed in the next section.

4.2 Büring (2003): problems and open issues

In this section I will show that the manner Büring (2003) accounts for why the interpretation on which the negation takes narrow scope with respect to the universal quantifier is not available for (44A1), discussed above, leads to inconsistencies and does not in every respect accord with speaker intuitions about the discourse environments where such sentences can appear.

As mentioned above, Büring (2003) claims that on both of its readings, (44A1) would be mapped onto a d-tree where the subquestion immediately dominating it, as well as the latter’s sister-questions, are of the form shown in (45a) and (45b), respectively. In this theory, as discussed in Chapter 2, the subquestion immediately dominating a declarative containing a contrastive topic must be an element of the CT-value associated with the latter, and the root question dominating the subquestion must be one whose complete answers are to be generated by conjoining the complete answers to all the questions in the CT-value. As already mentioned in Chapter 2, the CT-value associated with a particular declarative

depends on the form of the latter, as the description of the process of CT-value formation, repeated here, shows:

(46) *CT-value formation*

step 1: Replace the focus with a *wh*-word and front the latter, if focus marks the finite verb or negation, front the finite verb instead.

step 2: Form a set of questions from the result of step 1 by replacing the contrastive topic with some alternative to it.

(Büring 2003: 519)

It was already pointed out in Chapter 2 that one of the disadvantages of Büring's (2003) approach is that given a declarative with multiple readings, all of these readings must be associated with the same CT-value, therefore the theory predicts that the declarative is mapped on all of its readings onto the same moves within the same d-trees. Let us consider the consequences of the assumption that within any d-tree (44A1) can be mapped onto, the two readings of the sentence are mapped onto the same moves. In any of the d-trees, the root question dominating the node corresponding to (44A1) is identical to (45b), and the subquestion immediately dominating the latter must be of the form shown in (45a). The fact that among the questions in the CT-value, (44A1) is dominated by the one in (47a) follows from Büring's *principle of highest attachment*, discussed above (Büring 2003: 534), and from the fact that the same sentence cannot be mapped onto two different moves in the discourse tree. The set of possible answers to (47a) consists of the proposition stating that the relation denoted by the determiner *all* holds between the set of politicians and the set of corrupt individuals, and the latter's negation, as shown in (47b):

(47) a. Are all politicians corrupt?

b. $\{\neg\text{all}(\text{politicians})(\text{corrupt}), \text{all}(\text{politicians})(\text{corrupt})\}$

The first proposition in (47b) is true if the set of politicians is *not* the subset of the set of corrupt individuals, and the second one is true if it *is*, respectively. The assumption that (47a) dominates (44A1) in any well-formed d-tree seems motivated in the case of the $\neg\forall$ -reading of the latter, since (44A1) provides a complete answer to the question in (47a).¹⁰³ The proposition denoted by the $\forall\neg$ -reading of (44A1), formalized in (48), however, is not an element of the set in (47b) (although, naturally, (48) does entail one of the propositions in the latter set, namely, the first one):

(48) $\text{all}(\text{politicians})(\lambda x. \neg\text{corrupt}(x))$

(Büring 1997: 124)

¹⁰³ As noted in Chapter 2 above, Büring (2003) does not claim that it is a necessary condition for a declarative dominated by a question in a d-tree that the former provide a complete answer to the latter.

Moreover, there is one question in the CT-value of (44A1) to which the $\forall\neg$ -reading of (44A1) provides a complete answer, namely, the one shown in (49a). The set of its possible answers includes the two propositions shown in (49b), the second of which is logically equivalent to (48):

- (49) a. Are no politicians corrupt?
 b. $\{\neg\text{no}(\text{politicians})(\text{corrupt}), \text{no}(\text{politicians})(\text{corrupt})\}$

Thus, it seems counterintuitive to assume, as Büring (2003) does, that the $\forall\neg$ -reading of (44A1) should be dominated by (47A) in any well-formed d-tree, given that the latter is not the question to which the former provides a complete answer, and that there are other questions among the latter's sisters in the same d-tree to which the former does provide a complete answer.

The core of the problem, I believe, that Büring (2003) specifies the propositions he associates with declaratives containing contrastive topics with the help of English paraphrases, as in (43), and not with logical formulae. If in (43) a sentence of the form *Q abstracts got accepted* is supposed to represent a proposition, this proposition can be of two types. On the one hand, it can be a proposition expressing existence, that is, 'There are Q abstracts (possibly among others) that got accepted'. On the other hand, it can be a proposition expressing identification, that is, 'The number of abstracts that got accepted equals Q'. Parallel interpretations exist for the relevant questions characterized in (43) as well. The question *Did X abstracts get accepted?* can be interpreted as asking whether there are X abstracts (possibly among others) that got accepted, to be referred to as the *existence-reading* of the question, or as asking whether the number of accepted abstracts is X, to be referred to as the *identificational reading*. In English, the two readings of questions of the form *Did X abstracts get accepted?* differ in the place of the falling pitch accent: on the identificational reading, the accent falls on the determiner, on the existence reading, it falls on the auxiliary. In Hungarian, the two types of readings are expressed with the help of completely different structures. The two possible Hungarian translations of the English question *Did more than six abstracts get accepted?* are shown below:

- (50) $[_{\text{FP}} \text{Több, mint hat absztraktot } [_{\text{VP}} \text{fogadtak e!}]]$
 more than six abstract.ACC accepted.3PL VM
 'Was the number of abstracts that got accepted more than six?'

- (51) $[_{\text{DistP}} \text{Több, mint hat absztraktot } [_{\text{AspP}} \text{elfogadtak?}]]$
 more than six abstract.ACC VM.accepted.3PL
 'Were there more than six abstracts that got accepted?'

Note that the two kinds of interpretations characterized above are mixed even in the dialogues shown in (42): (42SQ3) and (42A3) must receive an existence-interpretation (required due to the presence of *any* in the question), whereas

(42SQ1) and (42A1), as well as (42SQ2) and (42A2) must get an identificational reading.

On the basis of these considerations, I believe that if we want to use Büring's (2003) theory to account for why a sentence like (52) or its English counterpart given as the translation of this example¹⁰⁴ lacks an interpretation, we need to decide which of the two possible interpretations (existential vs. identificational) would be intended for them in the first place:

- (52) *_[CT] /TÖBB, mint hat absztraktot] [_{AspP} \ELfogatdak.]
 more than six abstract.ACC VM.accepted.3PL
 * '[More than /SIX] abstracts \DID get accepted.'
Intended: 'There were more than six abstracts that got accepted.'

The reason why such a decision is necessary is that it can influence whether the intended interpretations of the sentences under consideration should or should not be regarded as complete answers to the corresponding root question, which is assumed by Büring to be a *How many...?* question. We will consider the consequences of the two possible choices separately.

Let us first assume that the intended interpretation for Hungarian declarative sentences having the structure and prosodic pattern as in [_{CT} /DET NP] [_{AspP} \V (XP*)]¹⁰⁵ on the verum focus reading of the verb, represented by (9b), repeated here as (53), as well as (52) above, is the identificational reading, which is to be paraphrased as 'The number of NPs that V (XP*) equals Det':

- (53) [_{CT} /ÖT absztraktot] [_{AspP} \ELfogatdak.]
 five abstract.ACC VM.accepted
 '/FIVE abstracts \WERE accepted.'
Paraphrase: 'There were five students who were late for class.'

The questions to which declaratives of the above kind provide congruent answers are *yes/no*-questions of the form *Does the number of NPs that V (XP*) equal Det?* The conjunction of the complete answers to such questions is equivalent to the complete answer to a question of the following form: *How many NP V (XP*)?*

In Büring's theory, as described above, a declarative that contains a determiner pronounced with the contrastive topic accent and followed by a verum or falsum focus is predicted to have an interpretation whenever it does not provide a complete answer to the corresponding *How many...?* question. Thus, in order to be able to judge whether (52) can be accounted for on the basis of these assumptions, one has to decide whether or not a sentence expressing the proposition 'The number of NP that V (XP*) equals more than six' (the intended meaning of (52) according to the assumption made above) provides a complete answer to the question *How many NP V (XP*)?* An exchange of the relevant form is shown in (54):

¹⁰⁴ I thank Philippa Cook for the judgments about the English data.
¹⁰⁵ As usual, XP* stands for possible lists of constituents.

(54) Q: How many abstracts got accepted?

A: More than six abstracts got accepted.

Let us assume that (54A) does not provide a complete answer to (54Q), since there is a more precise way to answer the latter question, namely, by using a DP with a bare numeral determiner (e.g. *seven*) instead of the complex determiner. This assumption leads to a contradiction, however, since it predicts that (55) and its English counterpart should be interpretable, given that they would not provide a complete answer to the relevant *How many?* question, either.

If we assume, on the contrary, that a sentence expressing the proposition ‘The number of NPs that V (XP*) equals more than six’, does provide a complete answer to the corresponding *How many*-question, it follows that the declarative in (53) above should also provide a complete answer to the question *How many abstracts got accepted?* The reason is that, on the above assumptions, the intended interpretation of the latter sentence would be the following: ‘The number of abstracts that got accepted equals five.’ (53), however, is not ill-formed, which shows that the supposition that Hungarian declaratives having the structure and prosodic pattern as in $[_{CTOPP} / \text{DET NP}] [_{AspP} \backslash \text{V (XP*)}]$ must receive an identificational reading is mistaken.

Let us now consider the second option referred to above, namely, that sentences having the structure $[_{CTOPP} / \text{Det NP}] [_{AspP} \backslash \text{V (XP*)}]$ express the proposition ‘There are Det NPs that V (XP*)’. On this assumption, the well-formedness of (53) is correctly predicted by Büring’s theory, since from the truth of a sentence expressing that there were five abstracts that got accepted it does not yet follow what the exact number of abstracts is that got accepted. What is not predicted by the above account, however, is why (52) is deficient. If this sentence expresses the proposition that there exist more than six abstracts that got accepted, then it does not entail what the exact number of abstracts is that got accepted, and, therefore, does not entail a complete answer to the corresponding *How many...?*-question. As a consequence, (52) is expected to be well-formed, which is not supported by the data. I believe that this overview has convincingly illustrated why Büring’s (2003) theory cannot be extended in an obvious manner to account for the relevant Hungarian data, including the ill-formedness of sentences like the one in (52).

Büring’s earlier work, Büring (1997), advances an alternative view, according to which the CT-values of declaratives are derived on the basis of their logical structure, by replacing the contrastive topic and the focus-denotations in the formulae representing their denotations by their type-identical alternatives. The CT-value associated with the reading of (44A1) on its inverse, $\neg\forall$, scope-order is shown in (55). (55a) represents the relevant set of propositions in a general form, some elements of which are listed in (55b):¹⁰⁶

¹⁰⁶ Büring (1997) does not specify whether (55b) is supposed to contain the set of all propositions in the CT (topic)-value, or only a subset of them. Since there is no reason to suppose that the denotations of determiners like *fewer than five* or *exactly six* are not alternatives of *all* when the denotations of *most*, *some* and *no* are, I will make an assumption corresponding to the latter strategy in what follows.

- (55) a. $\lambda P.\exists Q_{\langle et, \langle et, t \rangle \rangle}[Q \in \text{ALT}(\mathbf{all}) \ \& \ P = \lambda p.\exists \pi_{\langle tt \rangle} [\pi \in \text{ALT}(\mathbf{not}) \ \& \ p = \pi Q(\text{politicians})(\text{corrupt})]]$
 b. $\{\{\neg \text{all}(\text{politicians})(\text{corrupt}), \text{all}(\text{politicians})(\text{corrupt})\},$
 $\{\neg \text{most}(\text{politicians})(\text{corrupt}), \text{most}(\text{politicians})(\text{corrupt})\},$
 $\{\neg \text{some}(\text{politicians})(\text{corrupt}), \text{some}(\text{politicians})(\text{corrupt})\},$
 $\{\neg \text{one}(\text{politician})(\text{corrupt}), \text{one}(\text{politician})(\text{corrupt})\},$
 $\{\neg \text{no}(\text{politicians})(\text{corrupt}), \text{no}(\text{politicians})(\text{corrupt})\}\}$
 (Büring 1997: 125)

According to (55), the questions in the CT-value associated with the $\neg\forall$ -reading of (44A1) would be polarity questions of the form ‘Are Q politicians corrupt?’, similarly to what is proposed in Büring’s later work.

Consider now the CT-value associated with the $\forall\neg$ -reading of (44A1). According to Büring (1997), it is identical to the set of propositions in (56a), some elements of which are listed in (56b):

- (56) a. $\lambda P.\exists Q_{\langle et, \langle et, t \rangle \rangle}[Q \in \text{ALT}(\mathbf{all}) \ \& \ P = \lambda p.\exists \pi_{\langle tt \rangle} [\pi \in \text{ALT}(\mathbf{not}) \ \& \ p = Q(\text{politicians})(\lambda x.\pi(\text{corrupt}(x)))]]$
 b. $\{\{\text{all}(\text{politicians})(\lambda x.\neg \text{corrupt}(x)), \text{all}(\text{politicians})(\lambda x.\text{corrupt}(x))\},$
 $\{\text{most}(\text{politicians})(\lambda x.\neg \text{corrupt}(x)), \text{most}(\text{politicians})(\lambda x.\text{corrupt}(x))\},$
 $\{\text{some}(\text{politicians})(\lambda x.\neg \text{corrupt}(x)), \text{some}(\text{politicians})(\lambda x.\text{corrupt}(x))\},$
 $\{\text{one}(\text{politician})(\lambda x.\neg \text{corrupt}(x)), \text{one}(\text{politician})(\lambda x.\text{corrupt}(x))\},$
 $\{\text{no}(\text{politician})(\lambda x.\neg \text{corrupt}(x)), \text{no}(\text{politician})(\lambda x.\text{corrupt}(x))\}\}$
 (Büring 1997: 124)

Büring (1997) gives the following explanation for the non-availability of the $\forall\neg$ -reading for (44A1). As discussed in Chapter 2, declaratives with contrastive topics introduce the implicature that there is at least one question in their CT-value such that the answer to the latter is left disputable after the utterance of the declarative, where disputability means that no possible answer to the question is entailed or contradicted by the common ground after being updated with the information in the declarative. Since the proposition corresponding to the $\forall\neg$ -reading of (44A1) does entail an answer to all the questions in the CT-value in (56), the implicature is not satisfied, and, therefore, the sentence with the contrastive topic will not have the reading in question available. As discussed in Chapter 2, the above strategy runs into the problem of accounting for well-formedness, a ‘stable’ property of (potential) sentences, on the basis of the fact whether they introduce implicatures, a rather transient property.

Note that the method by means of which Büring (1997) generates CT-values for sentences containing quantificational contrastive topic phrases cannot be incorporated into his (2003) framework, since the sets of propositions in the CT-value in (56b), for example, cannot all stand for natural language questions, which is required in the spirit of Büring’s (2003) definition repeated in (46) above. Consider, for example, the set of propositions in the third row of (56b), repeated in (57):

(57) {some(politicians)($\lambda x. \neg \text{corrupt}(x)$), some(politicians)($\lambda x. \text{corrupt}(x)$)}

How could one formulate the English question whose set of possible answers is constituted by the propositions in (57)? Note that it cannot be the alternative question in (58), since the set of the latter's possible answers does not only include the propositions in (57) but also their conjunction (these propositions do not exclude each other):

(58) Are some politicians corrupt or are some politicians not corrupt?

The above discussion thus showed, I believe, that neither Büring's (2003) nor his (1997) theory can satisfactorily account for the lack of the $\forall \neg$ -reading of (44A1). Whereas the former is based on assumptions not supported by speaker intuitions regarding in what discourse contexts the relevant reading of (44A1) can appear, the latter attributes the lack of the reading to the lack of implicatures, which, however, are assumed to be cancellable anyway.

Having discussed the most systematically worked out theoretical approaches to explaining quantificational scope in general or the scope of quantificational contrastive topics in particular, we turn to our proposals as to what principles an adequate theory of contrastive topic scope in Hungarian should be based on. This starts with a systematic review of the relevant data in the next section.

5 Hungarian data: a systematic survey

As already discussed above, Hungarian sentences containing quantificational contrastive topic phrases can have one or two readings, which differ in the relative scopes of the contrastive topic phrase and the operator that is equivalent to or is part of the meaning of the focus phrase (understood in the semantic sense, as defined in Chapter 2). The focus phrases that can follow the quantificational contrastive topic phrase in a Hungarian sentence and can enter into scope interactions with the latter can be divided, according to a combination of syntactic and semantic criteria, into at least six classes: a non-quantificational expression in [Spec, FP], a quantificational expression in [Spec, FP], a universal quantifier in [Spec, DistP], a NegP dominating an FP (cf. É. Kiss 2002, and Olsvay 2000), a NegP dominating a VP, interpreted as *falsum focus* (or negated *verum focus*), and an AspP/VP, whose pitch-accented initial constituent marks *verum focus*.¹⁰⁷ (59)–(64) below illustrate the six ways of how a sentence containing a quantificational contrastive topic DP with a bare numeral determiner can be continued in Hungarian, with English paraphrases corresponding to each scope ordering. For ease of comparison, the verbal predicate (which only has a distributive interpretation) is kept constant across the examples.

¹⁰⁷ We will ignore in what follows the interpretation of pitch-accented verbs on which they are assumed to be contrastively focused.

- (59) [CT /ÖT fiú] [FP \MARit látogatta meg.]
 five boy Mary.ACC visited VM
 ‘FIVE boys visited \MARY.’
 i. ‘There are five boys for whom it was Mary who they visited.’¹⁰⁸ (five boys > Focus)
 ii. ‘It was Mary who was visited by five boys.’ (Focus > five boys)
- (60) [CT /ÖT fiú] [FP \TÖBB, mint három lányt látogatott meg.]
 five boy more than three girl.ACC visited VM
 ‘FIVE boys visited [more than \THREE] girls.’
 i. ‘There are five boys for whom it was more than three girls that they visited.’ (five boys > more than three girls)
 ii. ‘It was more than three girls that were visited by five boys.’ (more than three girls > five boys)
- (61) [CT /ÖT fiú] [DistP \MINDEN lányt meglátogatott.]
 five boy every girl.ACC VM.visited
 ‘FIVE boys visited \EVERY girl.’
 i. ‘There are five boys that visited every girl.’ (five boys > every girl)
 ii. ‘Every girl was visited by five boys.’ (every girl > five boys)
- (62) [CT /ÖT fiú] [NegP \NEM [FP Marit látogatta meg.]]
 five boy not Mary.ACC visited VM
 ‘FIVE boys didn’t visit \MARY.’
 i. ‘There are five boys for whom it was not Mary who they visited.’ (five boys > ¬ Focus)
 ii. ‘It was not Mary who was visited by five boys.’ (¬ Focus > five boys)
- (63) [CT /ÖT fiú] [NegP \NEM [VP látogatta meg Marit.]]
 five boy not visited VM Mary.ACC
 ‘FIVE boys \DIDN’T visit Mary.’
 i. ‘There are five boys that did not visit Mary.’ (five boys > ¬)
 ii. ‘It is not the case that Mary was visited by five boys.’ (¬ > five boys)
- (64) [CT /ÖT fiú] [AspP \MEGlátogatta Marit.]
 five boy VM.visited Mary.ACC
 ‘FIVE boys \DID visit Mary.’
 i. ‘There are five boys that did visit Mary.’ (five boys > AFF)
 ii. ‘It is the case that Mary was visited by five boys.’ (AFF > five boys)

¹⁰⁸ The paraphrases given in (59i)–(64i) here correctly reflect the scope relations between the relevant operators, but for simplicity they leave other aspects of the meanings of the sentences out of consideration, which will be discussed below.

Examples (65)–(70) below illustrate versions of (59)–(64) where the sentence-initial contrastive topic DP is replaced for one that contains a modified numeral determiner but also denotes a (right) upward monotonic quantifier. These quantificational DPs are allowed to appear in the so-called *distributive quantifier position* of the Hungarian sentence, referred to as [Spec, HDistP] by Szabolcsi (1997), and as [Spec, DistP] by É. Kiss (2002), and can introduce, according to Szabolcsi (1997), a ‘set referent’ into the discourse. The resulting sentences only have a reading where the contrastive topic phrase takes narrow scope with respect to the focus phrase. Two realizations of the six patterns turn out to be ill-formed, the one illustrated in (67), where the contrastive topic phrase is followed by a universal quantifier, and the one shown in (70), where it is followed by a verum focus:

- (65) [CT /TÖBB, mint öt fiú] [FP \MARit látogatta meg.]
 more than five boy Mary.ACC visited VM
 ‘[More than /FIVE] boys visited \MARY.’
Paraphrase: ‘It is Mary who was visited by more than five boys.’
 (Focus > more than five boys)
- (66) [CT /TÖBB, mint öt fiú] [FP \TÖBB, mint három lányt
 more than five boy more than three girl.ACC
 látogatott meg.]
 visited VM
 ‘[More than /FIVE] boys visited [more than \THREE] girls.’
Paraphrase: ‘It is more than three girls that were visited by more than five boys.’ (more than three girls > more than five boys)
- (67) * [CT /TÖBB, mint öt fiú] [DistP \MINDEN lányt meglátogatott.]
 more than five boy every girl.ACC VM.visited
Intended: ‘Every girl was visited by more than five boys.’
 (every girl > more than five boys)
- (68) [CT /TÖBB, mint öt fiú] [NegP \NEM [FP \Marit látogatta meg.]]
 more than five boy not Mary.ACC visited VM
 ‘[More than /FIVE] boys didn’t visit \MARY.’
Paraphrase: ‘It was not Mary who was visited by more than five boys.’
 (¬ Focus > more than five boys)
- (69) [CT /TÖBB, mint öt fiú] [NegP \NEM [VP látogatta meg Marit.]]
 more than five boy not visited VM Mary.ACC
 ‘[More than /FIVE] boys \DIDN’T visit Mary.’
Paraphrase: ‘It is not the case that Mary was visited by more than five boys.’ (¬ > more than five boys)

- (70) * [CT /TÖBB, mint öt fiú] [AspP \MEGlátogatta Marit.]
 more than five boy VM.visited Mary.ACC
 ? ‘[More than /FIVE] boys \DID visit Mary.’
Intended: ‘It is the case that Mary was visited by more than five boys.’
 (AFF > more than five boys)¹⁰⁹

In the next set of examples the contrastive topic phrase is a quantificational DP denoting a (right) downward monotonic quantifier. In addition to the option of undergoing contrastive topicalization, these DPs are only licensed among the Hungarian preverbal positions in the position immediately preceding the verb (referred to as [Spec, PredOpP] by Szabolcsi 1997, but subsumed under [Spec, FP] by É. Kiss 2002). The most significant difference between the list of sentences in (65)–(70) and the one by (71)–(76) is that the contrastive topic DPs denoting downward monotonic quantifiers seem to be incompatible with both verum and falsum focus. These contrastive topic DPs, as (73) shows, cannot be followed by a universal DP, either.

- (71) [CT /KEVESEBB, mint öt fiú] [FP \MArit látogatta meg.]
 fewer than five boy Mary.ACC visited VM
 ‘[Fewer than /FIVE] boys visited \MARY.’
Paraphrase: It is Mary who was visited by fewer than five boys.
 (Focus > fewer than five boys)
- (72) [CT /KEVESEBB, mint öt fiú] [FP \TÖBB, mint három lányt látogatott meg.]
 fewer than five boy more than three girl.ACC
 visited VM
 ‘[Fewer than /FIVE] boys visited [more than \THREE] girls.’
Paraphrase: It is more than three girls that were visited by fewer than five boys. (more than three girls > fewer than five boys)
- (73) * [CT /KEVESEBB, mint öt fiú] [DistP \MINDEN lányt meglátogatott.]
 fewer than five boy every girl.ACC
 VM.visited
Intended: Every girl was visited by fewer than five boys.
 (every girl > fewer than five boys)

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Note that the ill-formedness of (73) cannot be due to a prohibition against DPs with modified numeral determiners to appear as contrastive topic phrases when followed by a verum focus, since the versions of the latter sentences in (i) and (ii), where the position of the rising pitch accent indicates that the contrastive topic (proper) is the numeral alone or the noun, respectively, are well-formed and interpretable:

- (i) [CT Több, mint /ÖT fiú] [AspP \MEGlátogatta Marit.]
 more than five boy VM.visited Mary.ACC
 ‘More than [/FIVE] boys \DID visit Mary.’
- (ii) [CT Több, mint öt /FIÚ] [AspP \MEGlátogatta Marit.]
 more than five boy VM.visited Mary.ACC
 ‘More than five [/BOYS] \DID visit Mary.’

- (74) [CT /KEVESEBB, mint öt fiú] [NegP \NEM [FP Marit
fewer than five boy not Mary.ACC
látogatta meg.]]
visited VM
'[Fewer than /FIVE] boys didn't visit \MAry.'
Paraphrase: It was not Mary who was visited by fewer than five boys.
(\neg Focus > fewer than five boys)
- (75) * [CT /KEVESEBB, mint öt fiú] [NegP \NEM [VP látogatta meg
fewer than five boy not visited VM
Marit.]]
Mary.ACC
Intended: 'It is not the case that Mary was visited by fewer than five
boys.'¹¹⁰ (\neg > fewer than five boys)
- (76) * [CT /KEVESEBB, mint öt fiú] [AspP \MEGlátogatta Marit.]
fewer than five boy VM.visited Mary.ACC
Intended: 'It is the case that Mary was visited by fewer than five boys.'
(AFF > fewer than five boys)

Careful consideration of the facts illustrated above shows that no theory based on the assumption that the scope of a quantificational contrastive topic with respect to a focus phrase only depends on the availability of the implicatures and/or presuppositions introduced by the contrastive topic can explain them. One account based on the above assumptions, in addition to the ones discussed earlier in this chapter, is the one proposed by van Rooij (2008). According to this theory, the reason why Büring's (1997) classic example, repeated in (77), does not have the $\forall\neg$ reading is that this reading would contradict the *Topic Felicity Condition* cited in footnote 45, Chapter 2, repeated in (78):

- (77) /ALLE Politiker sind NICHT\ korrupt.
All politicians are not corrupt
i. 'It is not the case that all politicians are corrupt.' ($\neg\forall$)
ii. 'No politician is corrupt.' ($\forall\neg$)
(Büring 1997: 119)
- (78) *Topic Felicity Condition:*
There exists at least one alternative that is derived from substituting topic and focus values for other salient objects that is (i) not entailed by the assertion, and (ii) compatible with what the speaker knows.
(van Rooij 2008)

¹¹⁰ As already mentioned in Section 1 above, the English and German equivalents of this sentence are not necessarily as bad as the Hungarian one.

According to van Rooij, the topical implicature for both readings of (77) is that (the speaker thinks it is possible that) at least some politicians are corrupt. Given that this implicature is compatible with the reading of the sentence paraphrased in (77i) but not with the one paraphrased in (77ii), the account predicts that the former reading will be available for the sentence under consideration but the latter will not be.

The application of this strategy to the Hungarian case would predict that examples (65)–(66) and (71)–(72) each have two readings that differ from each other regarding the relative scopes of the contrastive topic and the focus phrases. Let us consider what this strategy would say about (66) above, repeated as (79):

- (79) [CT /TÖBB, mint öt fiú] [FP \TÖBB, mint három lányt
 more than five boy more than three girl.ACC
 látogatott meg.]
 visited VM
 ‘[More than /FIVE] boys visited [more than \THREE] girls.’
Paraphrase: It is more than three girls that were visited by more than five boys. (more than three girls > more than five boys)

If the availability of a reading corresponding to a particular scope order in (79) simply depended on the availability of the implicature encoded in (78), without any preference to any of the readings, then both potential readings corresponding to both scope orders should be licensed for the sentence: the truth of the proposition corresponding to the (purported) reading of the sentence that reflects the linear order of the quantifiers does not necessarily exclude the truth of a proposition of the form *x visited y* where *x* is replaced by *at least two* and *y* by *at least four*, for example (assuming that *x* takes scope over *y*).¹¹¹

If the scope of quantificational contrastive topics does not simply depend on the availability of the relevant implicatures/presuppositions, then it must depend on their lexical properties. The feature that distinguishes DPs with bare numeral determiners from DPs containing modified numeral determiners is that only the former can have a specific interpretation, which enables them to occur in the [Spec, TopP] position of the sentence and introduce an individual discourse referent (cf. Szabolcsi 1997). For this reason, in the rest of the chapter we will concentrate on the narrow scope readings of quantificational contrastive topic DPs. The following table summarizes how the interpretability of Hungarian sentences with quantificational contrastive topic DPs, more precisely, the availability of narrow scope readings for them depends, on the one hand, on the semantic properties of the DP (listed in the first column), and, on the other hand, on the syntactic/semantic properties of the semantic focus (listed in the first row), given a predicate with a distributive interpretation. (For simplicity, we will leave the case of the negated

¹¹¹ Given that the Hungarian sentence under consideration does not have a cumulative reading, we ignore the possibility that the alternative propositions have cumulative readings.

[Spec,FP] out of consideration here.) Existing combinations are indicated with a ‘✓’, non-existing ones with a ‘*’.

	<i>quantificational or non-quantificational DP in [Spec,FP]</i>	<i>universal DP in [Spec,DistP]</i>	<i>falsum focus</i>	<i>verum focus</i>
<i>DP with a specific reading</i>	✓ (59), (60)	✓ (61)	✓ (63)	✓ (64)
<i>right upward monotonic DP with no specific reading</i>	✓ (65), (66)	* ¹¹² (67)	✓ (69)	* (70)
<i>right downward monotonic or non-monotonic DP</i>	✓ (71), (72)	* (73)	* (75)	* (76)

Table 1. Available combinations of contrastive topic DPs and (semantic) focus phrases in Hungarian

Before turning to the possible strategies along which the examples listed and classified above could be analysed, we have to call attention to some further data that seem to blur the picture. First of all, extending our survey to predicates with collective interpretations shows that right downward monotonic DPs are not always incompatible with verum/falsum focus. For example, the following versions of (65)–(66), which differ from the latter in that their predicates can have both a distributive and a collective reading, turn out to be interpretable, but only on the second interpretation:

- (80) [CT /KEVESEBB, mint öt fiú] [NegP \NEM [VP emelte fel a
fewer than five boy not lifted VM the
zongorát.]]
piano.ACC
‘[Fewer than /FIVE] boys \DIDN’T lift the piano.’
i.# ‘It is not the case that the piano was lifted by fewer than five boys
individually.’
ii. ‘It is not the case that the piano was lifted by a group of fewer than
five boys collectively.’

¹¹² There is, actually, variation concerning the acceptability of sentences where contrastive topic phrases denoting right upward monotonic quantifiers are followed by focused universal quantifiers, cf. 6.3 below.

- (81) [CT /KEVESEBB, mint öt fiú] [Asp\FE]emelte a zongorát.
 fewer than five boy VM.lifted the piano.ACC
 ‘[Fewer than /FIVE] boys \DID lift the piano.’
 i.# ‘The piano was lifted by fewer than five boys individually.’
 ii. ‘The piano was lifted by a group of fewer than five boys collectively.’

Analogously, the following existential sentences are also well-formed and interpretable:

- (82) [CT /KEVESEBB, mint öt fiú] [NegP \NEM [VP látogatta meg
 fewer than five boy not visited VM
 még Marit.]]
 yet Mary.ACC
 ‘[Fewer than /FIVE] boys \HAVEN’T visited Mary yet.’
Paraphrase: ‘It is not the case that Mary has ever been visited by fewer than five boys (at the same time) yet.’
- (83) [CT/KEVESEBB, mint öt fiú] [VP \Látogatta már meg Marit.]
 fewer than five boy visited already VM Mary.ACC
 ‘[Fewer than /FIVE] boys \HAVE already visited Mary (at the same time).’
Paraphrase: ‘It is the case that Mary has already been visited by fewer than five boys (at the same time).’

Given the data in (59)–(76) and (80)–(83), it appears that a theory that intends to account for the scope-taking properties of quantificational contrastive topics in Hungarian has to be able to answer at least the following questions:

1. What is the source of the default narrow scope reading of quantificational contrastive topic phrases?
2. Why are quantificational contrastive topics that denote (right) upward monotonic quantifiers and have no specific reading not compatible with verum focus on the distributive reading of the predicate, as in (70)?
3. Why are quantificational contrastive topics that denote (right) downward monotonic or non-monotonic quantifiers not compatible with verum focus or falsum focus on the distributive reading of the predicate at all, as in (75) and (76)?
4. Why are quantificational contrastive topics not compatible with either a verum focus or a falsum focus on the a distributive reading of the predicate are compatible with a collective reading of the latter (if it exists), as in (80)–(81), as well as with (negated) existential predicates, as in (82)–(83)?

These are the questions we would like to address and suggest an answer to in the rest of this chapter.

6 New strategies for explaining the narrow scope of the contrastive topic

In view of the Hungarian data reviewed in the previous section we will survey three possible general strategies that could be applied in the course of accounting for when narrow scope readings are available for quantificational contrastive topics. We will argue for one of these approaches, and show how it can explain the relevant Hungarian data.

6.1 Narrow scope readings depend only on compatibility with the presuppositions

One potential direction from which the problem of when narrow scope readings for quantificational contrastive topics are licensed could be approached is to say the following: these readings are in principle always available whenever they do not contradict the presuppositions associated with the contrastive topic, as defined in (79) Chapter 2. Such an approach would thus assume that there are no structure-specific conditions on what type of quantificational contrastive topic can be followed by what kind of predicate in the Hungarian sentence, probably because the contrastive topic is generated in sentence-initial position (that is, left-dislocated, as advocated in É. Kiss 1987), with some extra mechanism (like coindexation with a postverbal empty argument position, as proposed by in É. Kiss in the above publication) ensuring that, other things being equal, the narrow scope reading is always available.^{113, 114} Such an approach runs into the following problem, however: there seems to be no way of explaining why (86) and (87), the Hungarian counterparts of the well-formed and interpretable German sentences in (84) and (85), do not have an interpretation, since the Hungarian examples should satisfy the presuppositions and implicatures (depending on the theory) regulating the interpretability of structures with a contrastive topic just as well as the German ones do.

- (84) /KEIN Politiker ist NIE\ betrunken.
no politician is never drunk

(Büring 1997: 138)

¹¹³ The apparent wide scope reading of quantificational contrastive topics with a specific interpretation would not cause a problem for this approach, since the latter reading is available for the relevant DPs even in postverbal position.

¹¹⁴ Molnár (1998) lists several arguments against the view that the availability of the narrow scope reading for quantificational contrastive topics can be explained by assuming that these constituents are generated in left-dislocated position. These include the one according to which the interpretational features of contrastive topics are not compatible with the semantics of left-dislocated constituents in various languages, and the one (based on Jacobs' proposals, cf. Jacobs 1997) that the range of quantificational expressions that can undergo left-dislocation vs. contrastive topicalization in German is different from those that can undergo it in Hungarian.

- (85) /KEIN Politiker ist IMMER\ betrunken.
no politician is always drunk
(Büring 1997: 138)
- (86) *_[CT /SEmennyi politikus] _[NegP \SOha nem volt berúgva.]
no politician never not was VM.drink.PARTIC
Intended: ‘It was never the case that no politician was drunk.’
- (87) *_[CT /SEmennyi politikus] _[DistP \MINdig be volt rúgva.]
no politician always VM was drink.PARTIC
Intended: ‘It was always the case that no politician was drunk.’

Actually, the ill-formedness of (87) could be accounted for by saying that the presence of a negative universal quantifier needs to be licensed by the presence of negation in Hungarian. The ill-formedness of (86), however, cannot be explained in this way, since it does contain sentence-negation, in fact, it has a well-formed counterpart with the subject DP in postverbal position, as in (88).¹¹⁵ (In the sentence below, the postverbal subject DP must bear a minor stress, but not a pitch accent, and/or be separated from the rest of the sentence with a pause.)

- (88) _[NegP \SOha nem volt berúgva] | _{semennyi politikus.]}
never not was VM.drink.PARTIC no politician
‘It was never the case that any politician was drunk.’

It is not easy to determine whether the intended interpretation of (86) is compatible with the presuppositions attributed to the contrastive topic in Chapter 2 above. According to the approach proposed by Büring (1997) (cf. also van Rooij 2008 for discussion), (84) has two readings, which correspond to the first order formulae in (89a, b). The reason why both readings are available is, roughly, that there is an alternative proposition (‘Some politicians are drunk’), formalized in (89c), whose truth is compatible with the truth of both of the propositions formalized in (89a, b):

- (89) a. $\neg\exists t\neg\exists x(\text{POLITICIAN}(x) \wedge \text{DRUNK}(x,t))$
b. $\neg\exists x\neg\exists t(\text{POLITICIAN}(x) \wedge \text{DRUNK}(x,t))$
c. $\exists t\exists x(\text{POLITICIAN}(x) \wedge \text{DRUNK}(x,t))$

The well-formed Hungarian counterpart of (86), shown in (88), does not express any of the above propositions, however, but the following one: ‘there is no pair consisting of a politician and a time such that the politician is drunk at the

¹¹⁵ As illustrated in (i) below, there is no general prohibition against negative universal DPs like the one in (86)–(87) to appear as contrastive topics in Hungarian sentences:

(i) _[CT /SEmennyi politikus] _[FP \TEGnap nem volt berúgva.]
no politician yesterday not was VM.drink.PARTIC
‘It was yesterday that no politician was drunk.’

particular time', which is due to the fact that Hungarian is a negative concord language. Assuming that the intended propositional content of (86) is as described above, it becomes clear that the part in it corresponding to the denotation *semennyi politikus* 'no politician' cannot be replaced by the denotation of another quantificational DP to give a well-formed proposition. This indicates that the question of whether a potential sentence with a contrastive topic will be well-formed in Hungarian does not only depend on whether the intended interpretation of the sentence is in accordance with the implicatures/presuppositions attributed to the contrastive topic, but also on whether the sentence satisfies particular syntactic restrictions, which, as the preliminary data show, seem to be analogous to the restrictions that apply to the counterparts of the sentences where the contrastive topic expression is situated in postverbal position.

A similar problem is raised by (75), repeated here as (90). If the availability of the narrow scope reading for the contrastive topic of (90) simply depended on whether the sentence was capable of introducing the required implicatures, and its intended truth-conditional content was equivalent to the proposition 'Mary was not visited by fewer than five boys' (relevant in a context where the speaker wants to implicate that she was visited by a different number of boys), there would be no way to account for why the sentence lacks an interpretation:

- (90) * [_{CT} /KEVESEBB, mint öt fiú] [_{NegP} \NEM [_{VP} látogatta meg
 fewer than five boy not visited VM
 Marit.]]
 Mary.ACC
Intended: 'It is not the case that Mary was visited by fewer than five boys.' ($\neg >$ fewer than five boys)

The above results thus indicate that an approach that intends to predict when the narrow scope readings of quantificational contrastive topics are available without taking into account how their intended truth-conditional content would be expressed by alternative structures in Hungarian is doomed to failure.

6.2 Narrow scope readings depend on the type of question answered

The second approach that we are going to investigate here differs from the latter one in that it assumes that there is a scheme, depending on the syntactic category of the semantic focus of the sentence, on the basis of which the intended propositional content of a sentence containing a contrastive topic is to be calculated. The syntactic category of the focus is in turn dependent on the type of question that the declarative containing the contrastive topic intends to provide a congruent answer to (polarity vs. constituent question). What this means is that the cases in columns 2–3 and 4–5 of Table 1 should be treated independently, since declaratives representing the former provide a congruent answer to a constituent question and a partial answer to a multiple constituent question, whereas those representing the latter provide a congruent answer to a *yes/no* question and a partial answer to a

(singular) constituent question. This is, roughly, the starting point assumed in Gyuris (2008a, 2009).

The approach proposed in Gyuris (2009), which is concerned with the question of how the narrow scope of contrastive topic DPs can be accounted for in sentences where the latter are followed by verum/falsum focus, starts from the following assumption. Hungarian sentences containing a verum/falsum focus express propositions that state the existence of a (sum) individual that possesses both the properties denoted by the contrastive topic DP (in the spirit of the so-called adjectival theory of NPs, to be discussed below) and those denoted by the verbal predicate, and which has as many atomic parts as specified by the determiner. (91a–b) illustrate how the propositions expressed by (59)–(60) above are to be formalized on the basis of these assumptions, where x is a variable over sum individuals, and $\#(x)$ stands for the number of atomic parts of x :

- (91) a. $\neg\exists x (\text{BOY}(x) \wedge \#(x) = 5 \wedge \text{VISITED}(x, \text{MARY})) =$
 $= \neg\exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY}))$
 b. $\exists x (\text{BOY}(x) \wedge \#(x) = 5 \wedge \text{VISITED}(x, \text{MARY})) =$
 $= \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY}))$

This means, in other words, that declaratives where a contrastive topic DP is followed by a verum focus are assumed to serve the purpose of introducing an individual into the discourse, which can be referred to by a subsequent anaphoric expression, whereas their counterparts with falsum focus express the proposition that there is no such individual. According to this approach, if, in this construction, sentence-initial DPs denoting downward monotonic and non-monotonic quantifiers could be pronounced with the rising pitch accent characterising the contrastive topic sentence-initially, then they would also have to introduce a discourse referent, which leads to a contradiction, since these DPs can never introduce a discourse referent. (This is the reason why they cannot occupy the ordinary topic position, cf. Szabolcsi 1997.) This is identical to saying that there is an incompatibility between the denotation of downward monotonic and non-monotonic quantity-indicating determiners and the denotation of the verum focus.

Sentences where a contrastive topic DP denoting a downward monotonic or non-monotonic quantifier is followed by a verum or falsum focus, illustrated in (82)–(83) above, present, naturally, a problem for this approach, which is solved in Gyuris (2009) by saying that in these sentences, the meaning of the contrastive topic DPs having the structure *fewer than n NP* or *exactly n NP* is actually coerced to be equivalent to that of *a group of NP with n elements*.

6.3 Contrastive topicalization only when other well-formed structures also exist

A third strategy for explaining why the narrow scope reading is the default one for quantificational contrastive topics and why it is not available in particular configurations is to say that contrastive topicalization, that is, placing a constituent into sentence-initial position and pronouncing it with a rising pitch accent, is an

operation that targets otherwise well-formed structures where the latter constituent is situated in postverbal position, it does not change the truth-conditional interpretation of these structures, only aims to evoke the pragmatic effects associated with the use of the contrastive topic. This approach predicts, on the one hand, that no sentence containing a quantificational contrastive topic expression is well-formed unless it has a well-formed counterpart in which the latter expression occupies a postverbal position without any prosodic marking¹¹⁶ and, on the other hand, that it is possible that a postverbal constituent of an otherwise well-formed sentence does not undergo contrastive topicalization, both of which seem to be confirmed by the data. (For one apparent counterexample, consider section 6.5 below.)

Among existing accounts on the syntax of the contrastive topic, this approach is the most compatible with those according to which contrastive topics occupy their position as a result of movement from postverbal position (proposed by Molnár 1998, Alberti and Medve 2000, É. Kiss 2000, Gécseg 2001, among others), and that their narrow scope is due to obligatory reconstruction at LF. Note that this approach, as opposed to the one illustrated in Section 6.1, does face difficulties with respect to structures where the infinitival form of the finite verb of the sentence or a noun phrase with a dative suffix is contrastively topicalized, as illustrated in Chapter 1, since these constituents could not appear in a postverbal position within the same sentence. We are not going to explore the consequences of this matter here.

Consider the following pair of examples, the first element of which has an universal DP in postverbal position, and the second shows the impossibility of the latter undergoing contrastive topicalization:

¹¹⁶

The following examples illustrate that there are well-formed sentences containing a contrastive topic DP in Hungarian, like (i), that do not have a counterpart with the DP occurring without any prosodic marking in postverbal position, illustrated in (ii), but only one where the DP bears one of the focus stresses within the VP, as shown in (iii) (cf. Chapter 1, section 4.2 above).

- (i) [CT /TÖBB, mint öt fiú] [FP a \HAMletet olvasta a \KERTben.]
 more than five boy the Hamlet.acc read the garden.in
 ‘[More than /FIVE] boys [were reading \HAMlet in the \GARden.]’
Paraphrase: ‘It was reading Hamlet in the garden that more than five boys did.’
 (Focus > more than five boys)

- (ii) *[FP A \HAMletet olvasta a \KERTben több, mint öt fiú.]
 the Hamlet.acc read the garden.in more than five boy
Intended: as in (i)

- (iii) ?[FP A \HAMletet olvasta \TÖBB, mint \ÖT (\)FIÚ a \KERTben.]

However, if a falling pitch accent is placed on a quantificational expression situated in postverbal position in a Hungarian sentence for a truth-conditional effect, to give rise to an obligatory or optional wide scope reading for the latter quantifier, as illustrated in (iv) below (cf. É. Kiss 1987, Hunyadi 2002, Jackson 2008 and Gyuris 2006, 2008b for discussion), the construction cannot have a truth-conditionally equivalent counterpart with the quantificational expression contrastively topicalized, as (v) illustrates:

- (iv) [FP \János köszöntött \MINden politikust.]
 John greeted every politician.ACC
 a. ‘Every politician is such that he/she was greeted by John.’ (\forall > Focus)
 b. ‘It was John who greeted every politician.’ (Focus > \forall)
- (v) [CT /MINden politikust [FP \János köszöntött.]
 every politician.ACC John greeted
 a. # ‘Every politician is such that he/she was greeted by John.’ (\forall > Focus)
 b. ‘It was John who greeted every politician.’ (Focus > \forall)

- (92) [_{DistP} \MINDIG be volt rúgva minden politikus.]
 always VM was drink.PARTIC every politician
 ‘/Every politician was \ALways drunk.’
- (93) * [_{CT} /MINden politikus] [_{DistP} \MINdig be volt rúgva.]
 every politician always VM was drink.PARTIC
 * ‘/Every politician was \ALways drunk.’

The ill-formedness of (93), which is the Hungarian version of one of Büring’s (1997: 138) classical examples, is readily accounted for by Büring’s (1997, 2003) and by van Rooij’s (2008) theories, as well as by an approach outlined in Chapter 2, according to which the intended propositional content of the sentence contradicts its presuppositions, which were defined in (76), Chapter 2 above. According to the latter (93) is ill-formed for the following reason: for any function f that maps the set of alternatives of \llbracket every politician \rrbracket , which are generated by replacing the denotation of *every* in the latter for all of its (contextually relevant) alternatives in turn, into the set of all contextually relevant alternatives to the denotation of *always*, it follows, given that f maps \llbracket every politician \rrbracket onto \llbracket always \rrbracket , what value it will assign to the other arguments. Informally, this means that given the intended propositional content of the above sentence (‘Every politician was always drunk’), it follows for any number of politicians how many times such a number of politicians was drunk (that is, depending on the number of politicians, either always or never). Thus, given the intended propositional meaning of (93), it cannot introduce the presuppositions that have been associated with the contrastive topic.

As it may have become apparent from the previous discussion, the most significant advantage of this third approach, as opposed to the other two, is that there is no need to postulate independent principles for deriving the intended truth conditional interpretation of the potential sentence that contains the contrastive topic for the various sentence types for the purposes of establishing their presuppositions, but in this process one can rely on what the truth-conditional meaning of the relevant well-formed counterpart of the sentence (with the contrastive topic expression situated in postverbal position) is. This also entails that for checking whether a particular sentence does introduce the presuppositions associated with the contrastive topic one does not have to calculate a range of alternatives for the contrastive topic expression independently of the sentence under consideration. (Rather, these alternatives can be generated by replacing the contribution of the expression to the truth-conditional interpretation of the counterpart of the potential sentence by its type-identical alternatives, independently of whether these type-identical alternatives can be expressed by constituents belonging to the same syntactic category as the contrastive topic expression in the language.) Building on the above assumptions, the source of the contrast between (67), repeated as (94) below, and (95), where the determiner of the contrastive topic DP has been replaced by one that is supposed to make the

same contribution to the truth conditions of the sentence, also becomes evident:¹¹⁷ the variant of (94) with the quantificational DP in postverbal position, shown in (96), is much less acceptable (if at all) than the corresponding variant of (95), shown in (97):¹¹⁸

- (94) * [CT /TÖBB, mint öt fiú] [DistP \MINDEN lányt meglátogatott.]
 more than five boy every girl.ACC VM.visited
Intended: Every girl was visited by more than five boys.
- (95) [CT /LEGalább hat fiú] [DistP \MINDEN lányt meglátogatott.]
 at.least six boy every girl.ACC VM.visited
 ‘[At least /SIX] boys visited \Every girl.’ (every girl > at least six boys)
- (96) ?? [DistP \MINDEN lányt meglátogatott több, mint öt fiú.]
 every girl.ACC VM.visited more than five boy
Intended: ‘Every girl was visited by more than five boys.’
- (97) [DistP \MINDEN lányt meglátogatott legalább hat fiú.]
 every girl.ACC VM.visited at.least six boy
 ‘Every girl was visited by at least six boys.’ (every girl > at least six boys)

Along the lines of the strategy outlined above, the contrast between (59), repeated as (98),¹¹⁹ which is ambiguous the way indicated, and its counterpart containing the subject DP *egy fiú* ‘one boy’, shown in (99), where the latter DP can only have a specific interpretation, can be shown not to be the result of contrastive topicalization, but a reflex of an analogous difference (to be accounted for independently of the problem of contrastive topicalization) between those counterparts of the relevant sentences where the subject DPs are situated postverbally, illustrated in (100) and (101), respectively:

¹¹⁷ Geurts and Nouwen (2007) and Krifka (2005) have, however, argued strongly against the accepted wisdom that DPs with determiners of the *at least n* and of the *more than n* type make the same truth conditional contribution to the sentences where they appear.

¹¹⁸ Naturally, one would like to have an explanation for the contrast between (96) and (97) in the long run as well. The data illustrate, in any case, that the asymmetry between (94) and (95) is not to be attributed to the contrastive topic. My conjecture is that among (96) and (97) only in the latter does the postverbal determiner have a relational meaning (‘For each girl, the total number of boys that visited her is at least six’), whereas in the former the determiner contributes to predicating the existence of particular individuals (‘For each girl, there are more than five boys who visited them.’) It appears, moreover, that the same contrast (that is, between an existential and a relational interpretation) is responsible for the fact that (61) above and (i) below also differ in acceptability:

(i) * [CT /PONtosan öt fiú] [DistP \MINDEN lányt meglátogatott.]
 exactly five boy every girl.ACC VM.visited

Intended: ‘Every girl was visited by exactly five boys.’

These observations would, naturally, have to be confirmed by systematic investigations.

¹¹⁹ Note that the paraphrase of the i) reading of the sentence has been replaced in (98) by one that more appropriately reflects the relevant interpretation of the sentence according to the claims made in section 6.1.

- (98) [CT /ÖT fiú] [NegP \NEM [VP látogatta meg Marit.]]
 five boy not visited VM Mary.ACC
 ‘/FIVE boys \DIDN’T visit Mary.’
 i. ‘For five particular boys, they did not visit Mary.’ (five boys > ¬)
 ii. ‘It is not the case that Mary was visited by five boys.’ (¬ > five boys)
- (99) [CT /EGY fiú] [NegP \NEM [VP látogatta meg Marit.]]
 five boy not visited VM Mary.ACC
 ‘/ONE boy \DIDN’T visit Mary.’
 i. ‘For one particular boy, he did not visit Mary.’ (one boy > ¬)
 ii.#‘It is not the case that Mary was visited by one boy.’ (¬ > one boy)
- (100) [NegP \NEM [VP látogatta meg Marit öt fiú.]]
 not visited VM Mary.ACC five boy
 i. ‘Five specific boys did not visit Mary.’ (five boys > ¬)
 ii. ‘It is not the case that Mary was visited by five boys.’ (¬ > five boys)
- (101) [NegP \NEM [VP látogatta meg Marit egy fiú.]]
 not visited VM Mary.ACC one boy
 i. ‘One specific boy did not visit Mary.’ (one boy > ¬)
 ii.#‘It is not the case that Mary was visited by one boy.’ (¬ > one boy)

Let us now consider how the general approach outlined above predicts that (71) above, repeated in (102), is interpretable:

- (102) [CT /KEVESEBB, mint öt fiú] [FP \MArit látogatta meg.]
 fewer than five boy Mary.ACC visited VM
 ‘[Fewer than /FIVE] boys visited \MARY.’
Paraphrase: ‘It is Mary who was visited by fewer than five boys.’
 (Focus > fewer than five boys)

Assuming that FEWER-THAN-FIVE stands for a relation between sets that obtains if the intersection of these sets contains fewer than five elements (cf. Barwise and Cooper 1981, Zwarts 1983), the truth-conditional meaning of the sentence above can be represented as follows, where $\lambda y.BOY(y)$ and $\lambda y.VISITED(x)(y)$ stand for the set of boys and the set of those who visited x . (The formalization of the meaning of the exhaustive/identificational focus relies on the proposals made by Szabolcsi 1994.)

- (103) MARY = ιx [FEWER-THAN-FIVE($\lambda y.BOY(y)$)($\lambda y.VISITED(x)(y)$) \wedge
 $\wedge \forall z$ [FEWER-THAN-FIVE($\lambda y.BOY(y)$)($\lambda y.VISITED(z)(y)$) $\rightarrow z \sqsubseteq x$]]

(103) means that the maximal individual that was visited by fewer than five boys is equivalent to Mary.¹²⁰ According to the definition of the presuppositions introduced by the contrastive topic proposed in Chapter 2, the sentence in (102) introduces the presupposition that there is at least one relation defined on sets such that when this relation is replaced for FEWER-THAN-FIVE in formula (103) above, then it does not follow what alternative MARY should be replaced for in it in order to arrive at a proposition that can be true at the same time as (103). Note that there are some relations, i.e. the one denoted by FEWER-THAN-FOUR, FEWER-THAN-THREE, etc., for which it is entailed, when they replace FEWER-THAN-FIVE in (103), what alternative of MARY should be put in the latter's place to make the resulting proposition true at the same time as (103): the denotation MARY itself. (If Mary is the person who was visited by fewer than five boys then she can be the only person who was visited by fewer than four, three, etc. boys as well. Of course, the proposal does not say that if (102) is true then the above alternative propositions, i.e. that Mary was visited by fewer than four, three, etc. boys must be true, only that the latter is the only way to make them true.) However, there are relations, like the one denoted by the determiner *more than six*, which, when replaced for FEWER-THAN-FIVE in the formula above, it is not entailed (in the lack of further contextual information) what MARY should be replaced for to make the corresponding proposition true at the same time.

Having discussed the advantages of the approach to explaining the scope of contrastive topic we have advocated here, and having shown the direction from which the explanation of the data in columns 2 and 3 in Table 1 above could be given, in the next section we turn to the analysis of examples where the quantificational contrastive topic is followed by a verum/falsum focus.

6.4 The scope of quantificational contrastive topics followed by verum/falsum focus

This section will concentrate on the interpretation of Hungarian sentences where a quantificational contrastive topic is followed by a polarity focus (a verum or a falsum focus). Such sentences, illustrated in (63)–(64), (69)–(70) and (75)–(76) above, repeated here as (104)–(109), encode congruent answers to *yes/no* questions. Here we will seek answers to the question of why (107) and (109) contrast with (105) in acceptability, (108) with (104) and (106), and (106) with (107). (The paraphrases of the (i) readings for (63)–(64) have been replaced in (104)–(105) for those that more appropriately reflect the relevant interpretation of the sentence, according to the claims made in section 6.1.)

¹²⁰ Reference to maximal individuals, naturally, has no particular role in the interpretation of (103), but it becomes important in capturing the meaning of its variants with a DP in [Spec, FP] denoting a plural individual like *Mary and Susan* or *two girls*.

- (104) [CT /ÖT fiú] [NegP \NEM [VP látogatta meg Marit.]]
 five boy not visited VM Mary.ACC
 ‘/FIVE boys \DIDN’T visit Mary.’
 i. ‘For five particular boys, they did not visit Mary.’ (five boys > ¬)
 ii. ‘It is not the case that Mary was visited by five boys.’ (¬ > five boys)
- (105) [CT /ÖT fiú] [AspP \MEGlátogatta Marit.]
 five boy VM.visited Mary.ACC
 ‘/FIVE boys \DID visit Mary.’
 i. ‘For five particular boys, they did visit Mary.’ (five boys > Verum)
 ii. ‘It is the case that Mary was visited by five boys.’ (Verum > five boys)
- (106) [CT /TÖBB, mint öt fiú] [NegP \NEM [VP látogatta meg Marit.]]
 more than five boy not visited VM Mary.ACC
 ‘[More than /FIVE] boys \DIDN’T visit Mary.’
Paraphrase: ‘It is not the case that Mary was visited by more than five boys.’ (¬ > more than five boys)
- (107) * [CT /TÖBB, mint öt fiú] [AspP \MEGlátogatta Marit.]
 more than five boy VM.visited Mary.ACC
 ? ‘[More than /FIVE] boys \DID visit Mary.’
Intended: ‘It is the case that Mary was visited by more than five boys.’
 (Verum > more than five boys)
- (108) * [CT /KEVESEBB, mint öt fiú] [NegP \NEM [VP látogatta meg
 Marit.]]
 fewer than five boy not visited VM
 Mary.ACC
Intended: ‘It is not the case that Mary was visited by fewer than five boys.’ (¬ > fewer than five boys)
- (109) * [CT /KEVESEBB, mint öt fiú] [AspP \MEGlátogatta Marit.]
 fewer than five boy VM.visited Mary.ACC
Intended: ‘It is the case that Mary was visited by fewer than five boys.’
 (AFF > fewer than five boys)

We will assume that the well-formed sentences (104)–(106) encode propositions predicating the existence or non-existence of individuals with particular properties, which follows from the claim, made in the previous section, that the truth-conditional meaning of a sentence containing a contrastive topic phrase is equivalent to that of its counterpart where the contrastive topic phrase is situated in postverbal position. The relevant counterparts of (104) and (105), illustrated in (100) above and in (110), have exactly this interpretation, as the translations indicate:

- (110) [AspP \MEGlátogatta Marit öt fiú.]
 VM.visited Mary.ACC five boy
 ‘It is the case that Mary was visited by five (specific/non-specific) boys.’

The reason why (108)–(109) should be considered ill-formed also follows from the above assumptions, since the variants of these sentences where the subject DP is situated in postverbal position, shown in (111)–(112), are also ill-formed in Hungarian.

- (111) * [NegP \NEM [vP látogatta meg Marit kevesebb, mint öt fiú.]]
 not visited VM Mary.ACC fewer than five boy
Intended: ‘Mary was not visited by fewer than five boys.’
- (112) * [AspP \MEGlátogatta Marit kevesebb, mint öt fiú.]
 VM.visited Mary.ACC fewer than five boy
Intended: ‘It is the case that Mary was visited by fewer than five boys.’

The only remaining problem to account for now therefore is why (105) and (107), the latter of which does have a well-formed counterpart with the subject DP in postverbal position, as illustrated in (113), as well as (106) vs. (107) contrast in having versus not having an interpretation.

- (113) [AspP \MEGlátogatta Marit több, mint öt fiú.]
 VM.visited Mary.ACC more than five boy
 ‘It is the case that Mary was visited by more than five boys.’

We will proceed along the following lines. We will assume that the intended interpretations of (104)–(106) and the presuppositions introduced by the contrastive topic, defined in (76) Chapter 2, are compatible with each other, but that the intended interpretation of (107) does conflict with these presuppositions.

For this purpose, one first has to determine the domain and the range of the function that is presupposed or would have to be presupposed by these sentences. We will assume that (104)–(107), just like their counterparts where the subject DPs are situated in postverbal position, encode propositions that express the existence or non-existence of a (sum) individual with particular properties, formalized in (114a–d) below in the respective order. In these formulae, x is a variable over sums, and $\#(x)$ stands for the number of atomic parts of x :

- (114) a. $\neg\exists x (\text{BOY}(x) \wedge \#(x) = 5 \wedge \text{VISITED}(x, \text{MARY})) = \wedge$
 $= \neg\exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY}))$
 b. $\exists x (\text{BOY}(x) \wedge \#(x) = 5 \wedge \text{VISITED}(x, \text{MARY})) =$
 $= \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY}))$
 c. $\neg\exists x (\text{BOY}(x) \wedge \#(x) > 5 \wedge \text{VISITED}(x, \text{MARY})) =$
 $= \neg\exists x (\text{BOY}(x) \wedge \#(x) \in \{6, 7, \dots\} \wedge \text{VISITED}(x, \text{MARY}))$

$$\begin{aligned} \text{d. } \exists x (\text{BOY}(x) \wedge \#(x) > 5 \wedge \text{VISITED}(x, \text{MARY})) &= \\ &= \exists x (\text{BOY}(x) \wedge \#(x) \in \{6, 7, \dots\} \wedge \text{VISITED}(x, \text{MARY})) \end{aligned}$$

According to (114a–d), sentences (104)–(107) all predicate the existence or the non-existence of a (sum) individual having both the property denoted by the contrastive topic DP and that denoted by the rest of the sentence (that is, the string starting with the verb or the negated verb). The view that a DP denotes a property¹²¹ reflects the assumptions of the so-called *adjectival theory*, advocated for particular NPs by Verkuyl (1981), and Link (1987, 1991, 1998). Link (1998: 70) formulates the idea as follows: “[t]he numerals ‘1’, ‘2’, ‘3’, ..., are adjective-like modifiers that pick out all those i-sums in an NP-extension which have the indicated number of atoms.” (115a–b) show how the denotation of the contrastive topic DPs in (104)–(105) and (106)–(107) are to be captured in terms of the adjectival approach:¹²²

$$\begin{aligned} (115) \text{ a. } \llbracket \text{öt fiú} \rrbracket &= \lambda x. \text{BOY}(x) \wedge \#(x) \in \{5\} \\ \text{ b. } \llbracket \text{ötnél több fiú} \rrbracket &= \lambda x. \text{BOY}(x) \wedge \#(x) \in \{6, 7, \dots\} \end{aligned}$$

Let us now consider how the function presupposed by the sentences in (104)–(106) should be characterized, given the formulae in (114a–c). According to the way the presuppositions introduced by the contrastive topic were defined in (76), Chapter 2, the domain of this function should correspond to the set of alternatives to the denotation of the contrastive topic phrase. In view of (114a–c), in the lack of any contextual restrictions it seems reasonable to assume that this set is equivalent to the set characterized in (116):

$$(116) \quad \{\lambda x. \text{BOY}(x) \wedge \#(x) \in C \mid C \in 2^{\mathbb{N}}\}$$

Informally, (116) is equivalent to the set of properties of sums of boys having as many atomic parts that corresponds to the elements of a subset (denoted by C) of the set of natural numbers. Now, the range of the function presupposed must consist of the set of alternatives to the focus phrase denotation. Given that the truth-conditional contribution of the falsum focus to the interpretation of the sentence is to negate the proposition expressed by the rest of the sentence, and the contribution of the verum focus is to leave it unaltered, the range of the functions presupposed by (104)–(105) will be assumed to be equivalent to the following set of functions:¹²³

$$(117) \quad \{\lambda p. p, \lambda p. \neg p\}$$

¹²¹ The view that contrastive topic DPs denote a property has already been advocated by É. Kiss (2000) and É. Kiss and Gyuris (2003), as discussed above.

¹²² For a critique of the classical adjectival approach to the interpretation of DPs, cf. Verkuyl and van der Does (1996).

¹²³ Note that the fact that the truth conditional content of the verum focus is to leave the proposition expressed by the rest of the sentence unaltered does not mean that the verum focus does not make other contributions to the meaning of the sentence (cf. the discussion of the same problem in Gyuris 2009).

Based on the previous assumptions, the function whose existence is presupposed by (104) can now be defined as in (118) below:

(118) Function f presupposed by (104):

$$f: \{\lambda x. \text{BOY}(x) \wedge \#(x) \in C \mid C \in 2^{\mathbb{N}}\} \rightarrow \{\lambda p. p, \lambda p. \neg p\}$$

$$\forall \alpha \in \text{Dom}(f): f(\alpha) = \begin{cases} \lambda p. p, & \text{if } \lambda p. p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \neg \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true,} \\ \lambda p. \neg p, & \text{if } \lambda p. \neg p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \neg \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true,} \\ \text{undefined otherwise.} \end{cases}$$

(118) says that the function f presupposed by (104) maps the domain consisting of the set (116) onto the range consisting of (117). It assigns the first element of the latter set to an element α of its domain if, provided that the proposition in (114a) is true, the proposition in (119) is also true (which is the case if Mary was visited by as many boys as specified by α):

(119) $\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))$

The function f assigns the second element of the set in (117) to an element α of its domain if, provided that (114a) is true, the proposition in (120) is also true (which is the case if Mary was not visited by as many boys as specified by α):

(120) $\neg(\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY})))$

In any other case, the value of the function is undefined. Analogously, the functions presupposed by the sentences in (105)–(106) are as defined in (121)–(122), respectively:

(121) Function f presupposed by (105):

$$f: \{\lambda x. \text{BOY}(x) \wedge \#(x) \in C \mid C \in 2^{\mathbb{N}}\} \rightarrow \{\lambda p. p, \lambda p. \neg p\}$$

$$\forall \alpha \in \text{Dom}(f): f(\alpha) = \begin{cases} \lambda p. p, & \text{if } \lambda p. p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true,} \\ \lambda p. \neg p, & \text{if } \lambda p. \neg p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \exists x (\text{BOY}(x) \wedge \#(x) \in \{5\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true,} \\ \text{undefined otherwise.} \end{cases}$$

(122) Function f presupposed by (106):

$$f: \{\lambda x. \text{BOY}(x) \wedge \#(x) \in C \mid C \in 2^{\mathbb{N}}\} \rightarrow \{\lambda p. p, \lambda p. \neg p\}$$

$$\forall \alpha \in \text{Dom}(f): f(\alpha) = \begin{cases} \lambda p. p, & \text{if } \lambda p. p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \neg \exists x(\text{BOY}(x) \wedge \#(x) \in \{6, 7, \dots\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true} \\ \lambda p. \neg p, & \text{if } \lambda p. \neg p (\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY}))) \text{ is true,} \\ & \text{provided that} \\ & \neg \exists x(\text{BOY}(x) \wedge \#(x) \in \{6, 7, \dots\} \wedge \text{VISITED}(x, \text{MARY})) \text{ is true,} \\ \text{undefined otherwise.} \end{cases}$$

Let us now consider how the proposal predicts that all of (104)–(106) are interpretable in Hungarian. (104) is predicted to be interpretable if there is an element α' in the domain of the function defined in (118) such that the value $f(\alpha')$ assigned to it is independent of the fact that the function assigns the value corresponding to the truth-conditional contribution of the falsum focus ($\lambda p. \neg p$) to the element in its domain corresponding to [[öt fiú]], defined in (115a). The above condition is satisfied for any α' that is equivalent to a property of the following kind:

(123) $\lambda x. \text{BOY}(x) \wedge \#(x) \in C'$, where $C' \subseteq \{1, 2, 3, 4\}$

Put differently, the above condition means that given that the proposition that there are no five boys that visited Mary is true, there is a quantity n for which it does not follow whether there are n boys that did visit Mary, if n is equivalent to any element of (a subset of) the set $\{1, 2, 3, 4\}$.

The reason why (105) is interpretable can be explained in an analogous fashion. The sentence is considered interpretable if there is an element α' in the domain of the function f defined in (121) such that the value assigned to it by the function, $f(\alpha')$, does not depend on the fact that f assigns the value $\lambda p. p$ to the element of its domain that corresponds to [[öt fiú]]. Any property α' in the domain of the function that satisfies the following requirement is applicable:

(124) $\lambda x. \text{BOY}(x) \wedge \#(x) \in C'$, where $C' \subseteq \{6, 7, \dots\}$

Informally, the above results mean that (105) is interpretable on the current account, because, given that the proposition that there are five boys that visited Mary is true there is a quantity n that corresponds to an element of (a subset of) the set $\{6, 7, \dots\}$ such that the truth of the latter proposition does not entail whether there are n boys that visited Mary.

Proving that (106) is interpretable proceeds analogously. It can be shown that there is an element α' in the domain of the function f defined in (122) such that from the fact that f assigns the value $\lambda p. \neg p$ to the argument corresponding to

[[ötnél több fiú]] it does not follow what value f assigns to α' , provided that the property α' satisfies the characterization in (125):

$$(125) \quad \lambda x. \text{BOY}(x) \wedge \#(x) \in C', \text{ where } C' \subseteq \{1, 2, 3, 4, 5\}$$

In plain English, this means that (106) proves to be interpretable because, given the fact that there are no more than five boys that visited Mary it does not follow for any n in $\{1, 2, 3, 4, 5\}$ whether there are n boys that visited Mary.

The only remaining problem now is how to account for the ill-formedness of (107). I propose that it can be solved by showing that any function f that maps the set of all possible alternatives to the denotation of the contrastive topic of this sentence, shown in (115b), onto the set in (117) in such a way that it assigns the value $f(\alpha)$ to the argument α if the formula in (126) is true, provided that (127) is true, has the following property: for any α' in the domain of the function f , the value $f(\alpha')$ is determined already by the fact that f assigns the value $\lambda p. p$ to the argument corresponding to [[ötnél több fiú]]:

$$(126) \quad f(\alpha)(\exists x(\alpha(x) \wedge \text{VISITED}(x, \text{MARY})))$$

$$(127) \quad \exists x(\text{BOY}(x) \wedge \#(x) \in \{6, 7, 8, \dots\} \wedge \text{VISITED}(x, \text{MARY}))$$

The condition formulated above can be expressed in an equivalent way by saying that the fact that (107) lacks an interpretation is proven in this framework if it can be shown that for any element α' in the domain of f , that is, for any element of the form in (128), the truth of (127) entails the truth of either of the two propositions listed in (129a, b) below:

$$(128) \quad \lambda x. \text{BOY}(x) \wedge \#(x) \in C'$$

$$(129) \text{ a. } \exists x(\text{BOY}(x) \wedge \#(x) \in C' \wedge \text{VISITED}(x, \text{MARY}))$$

$$\text{b. } \neg \exists x(\text{BOY}(x) \wedge \#(x) \in C' \wedge \text{VISITED}(x, \text{MARY}))$$

Note that for the above reasoning to go through, the domain of the function f presupposed by (107) cannot be equivalent to all denotations representable as in (128) for any subset C' of \mathbb{N} . For example, if the denotation in (130) was an element of the domain of f , then the ill-formedness of (107) could not be proved, since the truth of f does not entail the truth of either of the propositions in (131a–b):

$$(130) \quad \lambda x. \text{BOY}(x) \wedge \#(x) \in \{7, 8, 9, \dots\}$$

$$(131) \text{ a. } \exists x(\text{BOY}(x) \wedge \#(x) \in \{7, 8, 9, \dots\} \wedge \text{VISITED}(x, \text{MARY}))$$

$$\text{b. } \neg \exists x(\text{BOY}(x) \wedge \#(x) \in \{7, 8, 9, \dots\} \wedge \text{VISITED}(x, \text{MARY}))$$

The propositions in (131a, b) express that there are seven or more boys that visited Mary and that there are no seven or more boys that visited Mary, respectively, neither of which is entailed by the truth of (127). The fact that the independence of the truth conditions of the latter propositions from that of (127) is not enough for making (107) interpretable means that it has to be assumed when calculating the alternatives to the denotation of the contrastive topic DP of (107), that alternative properties of the form illustrated in (132) cannot be taken into consideration:

$$(132) \quad \lambda x. \text{BOY}(x) \wedge \#(x) \in C', \text{ where } C' \subset \{6, 7, 8, \dots\}$$

These data suggest that sentences where a quantificational DP as contrastive topic, containing a quantity-denoting determiner as contrastive topic proper is followed by a verum or falsum focus, impose a particular condition on the set $\text{ALT}(\llbracket \text{CT} \rrbracket)$, which is equivalent to the domain of the function f presupposed by the sentence. This condition is formulated in (133) below:

$$(133) \quad \text{Let } \llbracket_{\text{DP}} \text{Det NP} \rrbracket \text{ be the contrastive topic phrase of a Hungarian sentence } S \text{ and } \text{Det} \text{ be its contrastive topic proper. Let us assume that } \llbracket \text{NP} \rrbracket = \lambda x. \text{NP}(x). \\ \text{If } \llbracket \llbracket_{\text{DP}} \text{Det NP} \rrbracket \rrbracket = \lambda x. \text{NP}(x) \wedge \#(x) \in C' \subseteq \mathbb{N}, \\ \text{then } \text{ALT}(\llbracket \llbracket_{\text{DP}} \text{Det NP} \rrbracket \rrbracket) = \\ \{ \lambda x. \text{NP}(x) \wedge \#(x) \in C_1, \lambda x. \text{NP}(x) \wedge \#(x) \in C_2, \dots, \lambda x. \text{NP}(x) \wedge \#(x) \in C_n \mid \\ C_i, C_j \subset \mathbb{N}; C_i \cap C_j = \emptyset \}$$

What (133) expresses is that $\text{ALT}(\llbracket \text{CT} \rrbracket)$, the domain of the function f presupposed by the sentence type under consideration, consists of the property denotation of the contrastive topic phrase (informally, the property of falling into the extension of the NP and having as many atomic parts as one of the elements of the set of natural numbers associated with the determiner) as well as properties that differ from the latter in that they characterize sum individuals in the NP extension that have as many atomic parts as one of the elements of a set of natural numbers that is disjunct from the previous one. Although the idea of explicitly formulating a constraint like (33) might appear unmotivated at first sight, what it suggests is that in the type of sentences under consideration, quantity-expressions as contrastive topics convey that the relevant alternative quantities cover the domain of possible quantities, but do not overlap with each other, which seems to be motivated on intuitive grounds. Having proposed a suggestion as to why (107) turns out to be ill-formed in Hungarian, we look at cases where the explanation seems to fail through.

6.5 Quantificational contrastive topics and collective predicates

Assuming that the proposal for explaining that sentences like (107) lack an interpretation is on the right track, the question arises how it is to be reconciled with the fact that sentences like (134) and (135), which contain the same contrastive topic DPs as (112), do have an interpretation, provided that the sentence is taken to describe a collective event. Examples like (136), as well as (80)–(83)

above, which contain contrastive topic DPs denoting a downward monotonic quantifier, present a similar problem. Note, importantly, that the examples listed below all have well-formed counterparts where the contrastive topic phrase is situated in postverbal position, as shown in (137)–(139). In these examples, the postverbal quantificational DP must either be separated from the rest of the sentence with a pause, or bear a minor stress (though crucially not a pitch accent), marked with ‘\’ but no capitalization:

- (134) [CT /TÖBB, mint öt fiú] [ASP \FE] *emelte a zongorát.*
 more than five boy VM.lifted the piano.ACC
 ‘[More than /FIVE] boys \DID lift the piano.’
 i.# The piano was lifted by more than five boys individually.
 ii. The piano was lifted by a group of more than five boys collectively.
- (135) [CT /TÖBB, mint öt fiú] [VP \LÁ] *togatta már meg Marit.*
 more than five boy visited already VM Mary.ACC
 ‘[More than /FIVE] boys \HAVE already visited Mary (at the same time).’
Paraphrase: It is the case that Mary has already been visited by more than five boys (at the same time).
- (136) [CT /ÖT] *nél kevesebb diákot* [VP \LE] *vizsgáztatnék.*¹²⁴
 five.than fewer student.ACC VM.examine.COND.1SG
 ‘Fewer than /FIVE students I \WOULD examine.’
- (137) [ASP \FE] *emelte a zongorát* | \több, mint (\)öt \fiú.
 VM.lifted the piano.ACC more than five boy
 ‘The piano WAS lifted by more than five boys
 #individually/collectively.’
- (138) [VP \LÁ] *togatta már meg Marit* | \több, mint (\)öt \fiú.
 visited already VM Mary.ACC more than five boy
 ‘Mary HAS been visited by more than five boys #individually/together.’
- (139) [VP \LE] *vizsgáztatnék* | \ötnél (\)kevesebb \diákot.
 VM.examine.COND.1SG five.than fewer student.ACC
 ‘I WOULD examine fewer than five students #individually/together.’

I propose that the reason why examples (134)–(136) can have an interpretation on the collective reading of the predicate is that this reading can be made compatible with the presuppositions introduced by the contrastive topic: in all cases there is at least one alternative to the denotation of the contrastive topic phrase such that the truth of the sentence under consideration does not determine what value the

¹²⁴ Modified version of one of É. Kiss’s (2000) examples.

function presupposed by the sentence assigns to the argument corresponding to the latter.

Since the existence of n boys that lifted the piano together, where $n \in \{1, 2, 3, 4, 5\}$, is independent of the existence of a group of boys with more than five members that lifted it, sentence (134) is predicted to be interpretable. Similarly, the existence of more than five boys that visited Mary together is independent of the existence of five or fewer boys that did the same thing as a group, which makes (135) interpretable. (136) is a generic sentence describing a generalization about sums of boys having a particular property, namely, that they have fewer than five atomic parts. The sentence ascribes these the property that I would examine them. Krifka et al. (1995: 35) argue that number specification on an NP in the restrictor of the generic operator in the presence of distributive predicates makes the interpretation of the sentence pragmatically deviant.¹²⁵ Thus, in the case of (136) the number specification can be viewed as forcing the collective interpretation.

However, even the coerced interpretations illustrated for (136) above can become unavailable if the generic sentence describes a physical possibility or necessity such that its truth for a collection with a particular size entails that it also holds for all collections of a smaller or larger size. The ill-formedness of (140)–(141) is to be accounted for along these lines:

(140) # [CT /Kevés fiú] [AspP \FEL tudja emelni a zongorát.]¹²⁶
 few boy VM can lift.INF the piano.ACC
Intended: 'As for few boys, that many can lift the piano.'

(141) # [CT Az /Összes téglát] [AspP \FEL tudja emelni Józsi.]
 the all brick.ACC VM can lift.INF Joe
Intended: 'Joe CAN lift all bricks.'

The intended propositional content of (140) is that a set of boys consisting of a minimal number of elements can lift the piano. This entails that a set of boys with more than this minimal number of elements can also lift the piano. Analogously, the truth of the intended propositional content of (141), that Joe can lift all bricks together, entails that he can lift any number of bricks. Thus, the intended propositional contents of (140) and (141) contradict the presuppositions introduced by the contrastive topic, and this is the reason they lack an interpretation.

This closes our discussion of how the range of interpretations available for quantificational contrastive topic DPs when followed by collective predicates arises. The next section summarizes the results of the chapter.

¹²⁵ According to Krifka et al. (1995: 35), the meaning of *Twelve cats are beautiful if they have white fur* on the distributive reading of the predicate could just as well have been conveyed with the NP *ninety-nine cats* are simply with *a cat*. With nondistributive predicates, generic sentences with number-specified NPs in the restrictor become acceptable, as the following of their examples shows: *Two canaries can be kept in the same cage if it is large enough*.

¹²⁶ Observed by É. Kiss (2000).

7 Summary

In this chapter we have first reviewed some previous proposals aiming to account for the possibility/necessity for quantificational contrastive topic DPs to receive narrow scope readings with respect to another operator expression following them in the sentence. In section 1 we listed the core Hungarian data that we planned to test the existing proposals in the literature against. Section 2 reviewed some earlier proposals made for English and German data that show similar scope effects as Hungarian. It was established that none of these theories can be extended to cover the full range of Hungarian data. In section 3 we reviewed a family of proposals that were based on the assumption that the narrow scope readings of contrastive topic phrases are due to the fact that these constituents denote properties. It was shown that this idea, at least according to the way it is implemented in É. Kiss and Gyuris (2003), runs into problems, since it predicts a minimal scope reading for quantificational contrastive topic phrases, which is not always supported by the data. In section 4 we reviewed the predictions made by the influential theories of Büring (1997) and (2003), and showed that, although both of them offer ingenious solutions for deriving the range of available readings for a subset of the relevant examples, neither of them can be extended to handle the whole spectrum of the Hungarian data, and therefore an alternative explanation is necessary. Section 5 presented an extended set of data covering a wide variety of sentence patterns where quantificational contrastive topics can appear. Section 6 contained our proposals put forth to explain, on the one hand, why quantificational contrastive topics have a default narrow scope reading in Hungarian and under what circumstances these readings can be missing. The essence of the approach proposed is the following: i) the default narrow scope reading is due to the fact that only those Hungarian sentences containing a contrastive topic are well-formed that have well-formed counterparts with the contrastive topic expression in postverbal position, ii) only those sentences containing contrastive topics are interpretable in Hungarian where the intended propositional content does not contradict the presuppositions introduced by the contrastive topic, and iii) sentences containing a quantificational contrastive topic followed by a *verum/falsum* focus predicate the existence of a sum individual having the properties denoted by the contrastive topic and that denoted by the predicate. The section also looked at the contrast between the availability of interpretations for quantificational DPs as contrastive topics in sentences where they are followed by a *verum/falsum* focus on the distributive versus collective readings of the predicate.

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