FOCUS AND BACKGROUND MARKING IN MANDARIN CHINESE

System and theory behind *cái, jiù, dōu* and *yě*

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ABBREVIATIONS/CONVENTIONS

*	ungrammatical
?, ??, ???	reduced grammaticality
#	infelicitous
ADV	adverbializing enclitic
ASP	aspect marker
ATTR	enclitic deriving adnominal modifiers
BA	marker of preposed objects
CL(:xxx)	Classifier(:semantic specification)
CSC	enclitic at the left edge of the so-called 'complex stative construction' behind main verbs
INCH	marker deriving inchoative aktionsart
MU	monetary unit
ORD	ordinal number prefix
PASS	passive marker
PRT	sentence final particle

SMALL CAPS in examples indicate foci or C-topics.
In addition, C-topics are invariably [bracketed] and indexed.
Tone sandhi affecting *yī* 'one' and *bù* 'not' is not represented.

Students who start studying Mandarin will soon learn that the correct use of words meaning 'only', 'even', 'also' and the like has some puzzling sides to it in their new language. The astonishment caused by these facts originally incited my wish to write this study.

In the course of collecting material that would help me to understand the relevant facts more thoroughly, it turned out that it is not easy to delimit the level of linguistic description that is most important for a proper treatment of the empirical domain. Syntax is certainly relevant, semantics cannot be avoided, and pragmatics puts it all in context. At a later stage I found that even (some notion of) morphology or morpho-syntax is an important linguistic domain if we want to get a firmer grip on the problem. Needless to say, this study does not pay equal attention to all relevant areas. While some emphasis is put on the (focus) semantic portion of the problems, the syntax part is clearly least articulate.

In this introduction, I would like to give the reader an impression of what has stirred up my curiosity and where the observed phenomena have their place in linguistic theory. Towards the end of this introduction, I will add a short note on the kind of data that have been used, and I will give an outline of the internal organization of the present study.

1.1   PARALLEL *ONLY*-WORLDS AND OTHER PROBLEMS

Take an innocent English sentence such as *Old Wang only drinks tea*. One reading of this sentence says that Old Wang drinks tea, and that there is no other kind of beverage that Old Wang drinks. An equally innocent translation of this sentence into Mandarin is given in (1).

(1) *Lǎo Wáng   zhǐ   hē   chá.*
     old Wang   only drink tea
     'Old Wang only drinks tea.'

Judging from (1) alone, English and Chinese are languages with identical grammars and different lexicons, and the Mandarin word for *only* is *zhǐ* 只. The puzzling facts come in if we look at (2).

(2) *Lǎo Wáng   zhǐyǒu   chá   *(cái)   hē.*
     old Wang   only   tea   CAI   drink
     'Old Wang drinks only tea.'

In the English translation of (2), *only* has changed its position, but eve-

rything else has remained the same. In a way, (2) resembles its English translation, because the *only*-word *zhǐyǒu* immediately precedes the object. But it is easy to see that the Mandarin sentences differ more dramatically from one another than the English translations. Firstly, the object has been preposed in (2). Secondly, a more complex variant of the *only*-word *zhǐ*, namely *zhǐyǒu*, is used.[1] Thirdly, one more word is used in addition to the other words, namely *cái* 才. The important facts are that if the *only*-object is preposed, *cái* in (2) m u s t be used, and that *cái* may not be used if the object is not preposed. It is the class of words to which *cái* belongs that we will be interested in in this study.

The pattern of (1) and (2) recurs with *even*-words; cf. (3) and (4).

(3)   *Lǎo Wáng*   *shènzhì*   *hē*   *chá.*
      old Wang   even   drink tea
      'Old Wang even drinks tea.'

(4)   *Lǎo Wáng*   *lián*   *chá*   **(yě/dōu)*   *hē.*
      old Wang   even   tea   YE/DOU   drink
      'Old Wang drinks even tea.'

Again, both *shènzhì* 甚至 and *lián* 連 are *even*-words. But while (3) perfectly resembles its English translation, (4) again involves object preposing and the use of an extra word, viz. *yě* 也 or *dōu* 都, and not using *yě* or *dōu* would yield an ungrammatical sentence. Just as *cái* will be our object of study in the *only*-cases, I want to concentrate on *yě* and *dōu* in the *even*-cases.

Another facet of the problems arising for an analysis that deals with words like *cái*, *dōu* and *yě* as in (2) and (4) becomes obvious if we look at the following sentences.

(5)   a. *Tiānqì*   *hǎo,*   *wǒ*   *cái*   *qù.*
        weather good I   CAI   go
        'Only if the weather is good will I go.'
   b. *Tiānqì*   *hǎo,*   *wǒ*   *jiù*   *qù.*
        weather good I   JIU   go
        'If the weather is good I will go.'

(5a) is another instance of the use of *cái*, and (5b) introduces the fourth word of the paradigm, namely *jiù* 就. We are dealing with complex conditional sentences in (5), and since the subordination of the first clause under the second one gets lost if *cái* or *jiù* are dropped, the impression arises that *cái* and *jiù* are elements with a subordinating function. Note,

however, that the *only*-semantics relevant in the *cái*-sentence in (2) is also part of the meaning of (5a) and that *cái* is certainly not a subordinator in (2). For the translation of (5b), it is difficult or even impossible to find an English word which resembles *only* as in the translation of (5a) in function and which could be said to reflect the distinct property of (5b) as opposed to (5a). For this reason, and because *jiù* is often used in conditional sentences, many researchers have assumed that *jiù* is a main clause conditional marker. But if *jiù* really belongs to the same paradigm as *cái* (and also *dōu* and *yě*) – and this is definitely the case, as we will have many opportunities to see – it is not clear what the common core of *only*-semantics, *even*-semantics and conditional semantics should be. It will consequently be one aim of this study to show that the subordinating function of *jiù* (and the other words) is just an apparent one and that its real function is well in line with the function of the other members of the paradigm.

More data that are apt to confuse the language learner or that have figured prominently in the literature on *cái*, *jiù*, *dōu* and *yě* will briefly be presented below.

(6) is a pair of sentences illustrating two time-related uses of *cái*.

(6)   a. *Xiǎo Wáng*   *bā-diǎn*   *cái*   *lái.*
        Little Wang 8-CL:o'clock   CAI   come
        'Little Wang did not come until eight o'clock.'/
        'Little Wang came as late as eight o'clock.'
   b. *Xiànzài*   *cái*   *bā-diǎn*   *zhōng.*
        now   CAI   8-CL:o'clock   clock
        'It is only eight o'clock now.'

Sentence (6a) implies that eight o'clock is somehow late, while the same temporal predicate is felt to be early in (6b). If *cái* is held responsible for the specific evaluations of the temporal predicates in both cases – and practically all researchers who have dealt with the matter subscribe to this – it is a strange fact that *cái* should induce opposite evaluations.

The most mysterious fact about *jiù* has already been alluded to: If it has a function, at least this function usually does not have a segmental counterpart in English translations; cf. (7) and (8).

(7)   *Rúguǒ*   *tiānqì*   *hǎo,*   *wǒ*   *jiù*   *qù.*
      if   weather good I   JIU   go
      'If the weather is good, I will go there.'

(8)   *Wǒmen*   *zài*   *zhèr*   *jiù*   *néng*   *wánr.*
      we   at   here   JIU   can   play
      'We can play here.'

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[1] *Zhǐyǒu* is used before nominals and adverb(ial)s, *zhǐ* is used left-adjacent to the verbal complex.

The English translations of these sentences contain no words that are plausible candidates for performing *jiù*'s function in English – whatever it is. Note that this is not a peculiarity of English. At least translations into other common European languages display the same effect of *jiù* being swallowed along the way.

In the case of *dōu* and *yě*, stating the general function will not be the major problem. It will take some effort, though, to say how *dōu* and/or *yě* come to be used in all of the following contexts: *Even*-sentences, sentences involving negative polarity items, *no-matter*-sentences involving *wh*-words/indefinite pronominals with free-choice interpretations, and concessive (conditional) sentences. (9) gives one example each.

(9)　a.　*Lián Lǎo Wáng　　dōu/yě　lái.*
　　　　even old Wang　　DOU/YE　come
　　　　'Even Old Wang is coming.'

　　　b.　*Wǒ　tóu　yī-diǎn　dōu/yě　bù　tòng.*
　　　　I　head　1-CL:bit　DOU/YE　not　hurt
　　　　'My head doesn't hurt the slightest bit/at all.'

　　　c.　*Wúlùn　　nǐ　yào　shénme,*
　　　　no.matter　you　want　what
　　　　wǒ　dōu/yě　huì　gěi　nǐ　mǎi.
　　　　I　dou/ye　will　for　you　buy
　　　　'No matter what you want, I will buy it for you.'

　　　d.　*Jíshǐ　guówáng　lái,　wǒ　dōu/yě　bù　qù.*
　　　　even.if　king　　come　I　DOU/YE　not　go
　　　　'Even if the king comes I won't go.'

Even if it is intuitively plausible that the different phenomena instantiated by these examples somehow belong together, it is not obvious what the link really is.

So far I have avoided the term 'focus' when talking about the phenomena that we shall be interested in. In a sense to be made explicit, *cái*, *jiù*, *dōu* and *yě* interact with foci (or with C-topics/contrastive topics). In the following section I will characterize the notion of focus that I will make use of in this study.

1.2　FOCUS-BACKGROUND STRUCTURES

Many linguists use the term 'focus' as in the tradition starting with Halliday (1967), Chomsky (1971) and Jackendoff (1972). In this tradition, the focus of an utterance 'is the part of the sentence that answers the relevant wh-question (implicit or explicit) in the particular context in which the sentence is used' (Gundel 1999: 295). Thus, *Bill* in the question-answer sequence in (10) is a focus.

(10)　Q:　*Who called the meeting?*
　　　A:　*Bill called the meeting.*

Bill in (10) is prosodically prominent, and it constitutes that part of (10A) which is not already presupposed by the context, i.e. by the question in (10). When the person answering the question takes his turn, it is already part of the (discourse) background, or the common ground, that someone called a/the meeting. It is reasonable to say that *Bill* is new information in (10A), and that *someone called the meeting* is old or given information.

There is a widespread misunderstanding of what 'new information' and 'given information' should be taken to mean. In the case of (10), *John* being new information does not mean that the discourse participants have not talked about John before or that one of them does not know John. *John* is new information inasmuch as he is asserted to be the agent referent of the eventuality encoded by *someone called the meeting*. Before (10A) has been uttered, *someone called the meeting* was part of the common ground shared by the speaker and the hearer, but *Bill called the meeting* was not, without this precluding that Bill has been talked about immediately before. After uttering (10A), both assertions are part of the common ground. In short: 'Focus' is a relational notion, and the entity a focus relates to is called its background, or presupposition. I will usually use the term 'background'. The background is that portion of an utterance that the speaker assumes to be in the common ground prior to the utterance. Formally, the background is often represented by an open proposition with a λ-bound variable in the position of the focus.[2] The background of (10A) may thus be represented as in (11).

(11)　$\lambda x[x$ *called the meeting*]

Since the formalities of focus-background interpretation will not be dealt with in the present study, it suffices to know that a representation as in (11) amounts to saying that a background is a kind of predicate which can be saturated by the focus. If we introduce the focus argument into the formula as in (12a), the predicate may become saturated by way of λ-conversion, and the complete proposition (in its asserted version) in (12b) is the result.

(12)　a.　$\lambda x[x$ *called the meeting*], *Bill*
　　　b.　*Bill called the meeting*

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[2] This mode of representation in terms of expressions of the λ-calculus was first used by von Stechow (1981).

I will sometimes make use of representations as in (11) or (12), but this is just done for the reason of having a way of representing focus-background partitions in an unequivocal way. More often, I will make use of natural language paraphrases of open propositions which have indefinite expressions in the position of the focus (cf. *Someone called the meeting* as opposed to *Bill called the meeting* above).

One more point concerning backgrounds must be stressed at this early stage of the investigation. If a proposition forms part of the background, this does not necessarily mean that the proposition has been a s s e r t e d previously; the only requirement is that it has been c o n s i d e r e d. Turn to (13) to see what this means.

(13)   *A: It's a pity that John didn't call a meeting.*
        B: True. But in the end Bill called the meeting.

In (13) *someone called a meeting* is part of the background before B replies to A's statement, and this holds even though A's turn does not imply that any meeting was held at all. This means that backgrounded information need not be asserted information, i.e. infomation believed to be true by any of the discourse participants.

In most languages, foci must conform to a certain, partially language-specific, prosodic pattern. In English, the main stress of an utterance is a pitch accent the exact phonetic realization of which does not matter here. This accent must be on a syllable which is part of the focus. In (10A), the accented syllable and the focus are co-extensive. This is not always the case, though. In the following answer to (10Q), the focus comprises a lot more than just the intonational peak.

(10A')   *The boy next door called the meeting.*

In (10A'), *door* bears focal stress, but the whole subject *the boy next door* is the focus. A lot of research has been devoted to describing and predicting the placement of stress within foci (cf., among many others, Selkirk 1984, 1995, Cinque 1993 or Schwarzschild 1999). This discussion is irrelevant to our concern.

I will typically indicate the focus interacting with *cái, jiù, dōu* or *yě* by using small caps. In all of these cases the focus comprises a syllable with a focus accent.[3] Words written with small caps are thus not to be confused with words/syllables bearing focal stress. I will not generally

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[3] It is a false, albeit widespread, assumption that Mandarin, being a lexical tone language, does not have an accent system the way English does. Mandarin does have pitch accents, although of course they interact with the lexical tones. Stressed syllables in Mandarin have higher or lower extreme values of the basic frequency f_0 depending on whether the tone starts in a high or a low underlying tonal component, and they are louder than unstressed syllables.

indicate other foci that may be present in the Mandarin examples. Sometimes, when focus-background structures are not at issue or when they are unclear, I will not even indicate them in sentences with *cái, jiù, dōu* or *yě*.

Apart from the very basic facts as discussed with respect to (10), the two questions what focus-backgound structures really are and on which level of analysis they should be represented, constitutes a highly controversial issue.

The most general division is probably between those researchers who assume that the focus-background partition ought to be represented on some level of syntax, and those researchers who prefer a more parsimonious syntax and put the load on semantics and pragmatics.

Within the syntax camp, more subtle dividing lines can be drawn. Some researchers assume a special kind of movement, focus movement, which yields the right syntactic structure from which the information structure can be read off. They are opposed by others who argue that the movement of foci is really a kind of quantifier movement, and by yet others who consider the idea of a general movement of foci a dubious idea (Kratzer 1991c, von Stechow 1991). Another question is whether the level on which focus-background structures are read off is the standard syntax-semantics interface level L(ogical)F(orm) of the generative, mainstream T-model of grammar, or whether a distinct syntactic level for the representation of information structure should be assumed (the latter position is taken by Vallduví 1992).

The semantics/pragmatics faction will argue that in-situ interpretation of foci is possible. The claim that information structure must be reflected in syntax by way of a mechanism that opposes a focus constituent and a background constituent somewhere in the course of the syntactic derivation of a sentence is rejected. This line of research became popular with Rooth (1985). More recent proponents (of slightly modified theories along Rooth's general line) include Kratzer (1991c) or Büring (1997, to appear). Schwarzschild (1999) heads in the direction of a radically pragmatic account which dispenses completely with syntactically marked foci. Nothing is "read off" the syntactic structure at the syntax-semantics interface in this theory, and the whole calculation of alternatives is left to pragmatic principles that are put to work in a constraint-based fashion.

In ch. 3 we will be dealing quite extensively with facts of obligatory movement, and so one might assume that I should side with the syntax approaches. In fact, I will remain entirely agnostic with regard to the question of what kind of movement we are confronted with in those cases in which certain focusing facts trigger movement. Since I do not

develop any syntactic arguments in the narrower sense I prefer to remain vague in this respect. However, the main claim of ch. 3, namely that the use of *cái, jiù, dōu* and *yě* is a morphosyntactic phenomenon, precludes the possibility of siding with a radically pragmatic account.

1.3   ALTERNATIVES

Another important ingredient of theories of focus-background structure or information structure is their treatment of alternatives. Reconsider our old example (10), repeated here as (14).

(14)   *Q: Who called the meeting?*
         A: BILL called the meeting.

Assume that (14Q) is asked in a situation in which the people who might potentially have called the meeting are Mary, Jack, Peter and Bill, and both discourse participants know this. In this setting, focusing *Bill* as in (14A) does not just assert that Bill called the meeting, it also states that this assertion is made with respect to the potential calling of the meeting by any of Mary, Jack, Peter or Bill.[4] In cases of simple focusing, nothing is entailed about the truth or falsity of these alternatives. In later chapters, we will not usually be dealing with such simple foci. The kinds of foci treated in this study will invariably imply something about the truth or falsity of (some of) the alternatives.

There are two ways of talking about focus alternatives. One way is to say that in (14A), Mary, Jack and Peter are alternatives to Bill with regard to calling the meeting. The other way is to say that the sentence *Bill called the meeting* has the following alternatives: *Mary called the meeting, Jack called the meeting,* and *Peter called the meeting.*[5] This may not appear to make a big difference, but it becomes important once researchers use the first mode of speaking about alternatives and ignore the relatedness of the alternatives to the background. We will concern ourselves with the consequences of this sloppy talk in the sections on so-called scale reversals. I will usually state all of my pertinent generali-

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[4] Often the alternatives are more numerous than in our example, but this does not affect the general argument. Formal theories of focus semantics will usually allow the focus variable to range freely over the whole domain of type-identical values, and the selection of alternatives that are actually considered is restricted by some context-dependent mechanism (cf. Rooth 1985, 1996 or von Fintel 1994).

[5] In the theories of Rooth (1985) or Büring (1997) the set of alternative propositions, the p-set, comprises the asserted sentence. Theories in the tradition of Rooth ascribe a very important interpretive status to the set of contextually relevant alternative propositions, because this set is equated with a particular kind of meaning that each sentence has apart from its conventional meaning. This second meaning of each sentence is called its 'focus meaning'.

zations in terms of alternative sentences or propositions instead of talking about alternative focus values. Occasionally, I will make use of the sloppier way of speaking to avoid clumsy wordings, but the context will always make it clear that sets of alternative sentences or propositions are under discussion.

I will not say anything about the meaning of focus-sensitive expressions such as *only* or *even* here. For this discussion, the reader is referred to ch. 4. The only thing we should mention at this early point is that words like *only* or *even* always relate to a focus in a specific way. One way of referring to this relation is to speak of association with focus (see Rooth 1985 and the following tradition). Another way of putting it is to say that a focus particle like *only* or *even* focuses (on) something/its focus. I will make some effort to show that the relation holding between *cái, jiù, dōu* and *yě* and their foci does not conform to the relation between words like *only* or *even* and their foci. For this reason I will say throughout the whole study that *cái, jiù, dōu* and *yě* 'interact' with a focus. A more explicit account of what I assume this interaction to be will be presented in section 3.4. Sometimes, I also use terms like '*cái*-focus' or '*jiù*-focus', but this should never be taken to mean anything more specific than 'focus interacting with *cái/jiù/*...'.

1.4   DATA

Since I am not a native speaker of Mandarin, I had to rely on work with consultants and on available texts from which examples could be taken. When it came to choosing whether attested data or elicited data should be used in the course of an argument, I have tried to stick to the following rule: If the argument requires minimal pairs, elicited data are used; if the argument does not rest on minimal contrasts, I often use attested data. In the second case, the source has invariably been annotated. Sometimes, the attested data are elliptical or too long. In these cases, I have usually added or omitted appropriate words, and the source annotation is preceded by 'ad.' (for 'adapted from') or 'cf.'.

1.5   ORGANIZATION OF CHAPTERS/HOW TO USE THIS STUDY

Few readers will want to read this study from cover to cover. I have designed chs 2 through 4 in such a way that selective reading is encouraged. Two organizational axes determine the make-up of these chapters.

The first axis arranges the phenomena to be discussed systematically. In ch. 2, those uses of *cái, jiù, dōu* and *yě* that will concern us in later chapters are presented within the context of all use types of words that

are written with the same characters. This chapter is designed in a way which makes it apt to be used as a reference readers may refer back to from different points of the discussion in later chapters. Apart from the last section, it is not written in a way which facilitates a complete reading. Then, obligatory and ungrammatical uses of *cái*, *jiù*, *dōu* and *yě* are discussed from the point of view of contexts with stable information structural designs, but differing relations of dominance or c-command and precedence among the foci and *cái*, *jiù*, *dōu* and *yě* (ch. 3). This part of the study presents the data that are needed to make the morphosyntactic claim concerning our subject (section 3.4). The last step is the discussion of the focus quantificational components of meaning that go along with the use of *cái*, *jiù*, *dōu* and *yě*, and I will show how the large variety of contexts in which these words occur can be reduced to a single focus quantificational type each (ch. 4). Sections 4.1 through 4.3 are rather self-contained, and each of them may be read without knowing the rest of the study.

The second, orthogonal axis arranges the discussion according to which of the particles is used. Viewed from this angle, the main part of the present study comprises three "monographs" (Since I treat *dōu* and *yě* together in chs 3 and 4, four words yield only three "monographs"). The two axes can easily be identified in Table 1.1.

Depending on what individual readers are most interested in, it should be possible to identify the relevant sections quickly. In most cases in which I had to decide for or against redundancy, I have decided in favour of repetitions, simply because stating things only once would obviate a fruitful cursory reading.

Table 1.1 The make-up of chs 2, 3 and 4

	"The cái-monograph"	"The jiù-monograph"	"The dōu/yě-monograph"
Ch. 2: Use types	2.1 Use types of *cái*	2.2 Use types of *jiù*	2.3 Use types of *dōu* 2.4 Use types of *yě*
Ch. 3: Triggers and constraints	3.1 The case of parametric *cái*	3.2 The case of parametric *jiù*	3.3 The cases of parametric *dōu* and *yě*
Ch. 4: *Cái, jiù, dōu, yě* and focus semantics	4.1 The function of parametric *cái*	4.2 The function of parametric *jiù*	4.3 The function of parametric *dōu* and *yě*

The sections in Table 1.1 constitute the empirical and descriptive core of the study. However, important generalizations from a higher perspective are presented in the last sections of each chapter, i.e. in sections 2.5,

2.6; 3.4, 3.5 and 4.4. In section 4.5 the peripheral paradigm members *hái* and *zài* are discussed and integrated into the analysis.

Ch. 5 is a collection of separate discussions concerning sub-classes of the data that are dicussed in chs 2 through 4. What these discussions have in common is that they all deal with the interaction of focus quantification with other instances of quantificational phenomena, and we will stumble over syntax-semantics mismatches at several points.

Ch. 6 assembles the main results and conclusions again, and tasks for future research are identified from a wider theoretical and cross-linguistic perspective.

In this chapter I will deal with a classification of the different use types of *cái, jiù, dōu* and *yě* (sections 2.1 through 2.4). This classification is a refined blend of different proposals that have been made in the literature. Especially in the case of the parametric use type further sub-divisions are assumed to prove useful in later chapters.[1] Section 2.5 will deal with the justification for establishing each element in the parametric use as an independent linguistic sign in its own right. This is done because the parametric use type will be the sole concern of the chapters to follow, and the requisite separation from the other use types should be put on a principled basis. Tables comparing the classifications used here and in other studies have been appended in section 2.6 at the end of this chapter to allow the reader a quick overview of the facts.

In all those parts of this chapter which do not deal with the parametric use type of *cái, jiù, dōu* or *yě*, I present a lot of data that will not be made use of in subsequent chapters. It may seem out of place to devote so much space to the enumeration of things just in order to sort them out, but for two reasons I think the other use types must be mentioned in this study. The first reason has to do with the research tradition: many researchers dealing with *cái, jiù, dōu* or *yě* have defended the position that all use types of each element are manifestations of a univocal meaning. Although I do not agree with this position I think it would be misleading for readers who are unfamiliar with this tradition to fully detach my study from this line of research. The second reason has to do with the descriptive stance taken here: I think it better to include a "dictionary" of use types that may, independently of the main claims defended in later chapters, be used for future theory-building than to fully concentrate on the section of data that I need to state my claims.

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[1] I adopt Biq's (1984, 1988) term 'parametric use' because I think it is a handy and theoretically innocuous term. Without signalling any categorial or narrow semantic status, it makes reference to the overarching class of foci that may interact with *cái* as 'parameters that are involved in the actuation or restriction of an eventuality' (Biq 1984). Although I make use of Biq's term, I apply it to more cases than she does. (For Biq cases in which the focus follows *cái* are never parametric; cf. footnote 4.)

As said above, I argue that the parametric use type of each of *cái*, *jiù*, *dōu* and *yě* is a linguistic sign related to the other use types by homonymy or, perhaps, some broadly defined notion of polysemy. On the other hand, I wish to remain entirely agnostic as regards the relations of meaning holding between the different non-parametric use types of each of the four particles. The modal use type of *cái* and *jiù* constitutes, however, an exception to this rule. More on this will be said in section 2.1.2.

The survey of use types in sections 2.1 through 2.4 is followed by a section which justifies the independent treatment of the parametric use. The chapter concludes with an overview of classifications put forward by different authors in section 2.5.

2.1 USE TYPES OF *CÁI* 才

2.1.1 *The parametric use type of* cái

The parametric use type of *cái* always involves interaction with a focus. The focus never comprises the whole utterance. English translations of sentences with *cái* will usually contain expressions like *only* or *not ... until*. Sub-types of the parametric use type vary with the following parameters:

(i)   parametric *cái* precedes its interacting focus, or parametric *cái* follows its interacting focus;

(ii)   the interacting preceding focus may be a constituent of an embedded clause, or it may be a constituent of the clause in which *cái* occurs;

(iii) the interacting preceding focus may often be, but it need not be, marked by one of a limited set of special functional elements.

In what follows in this section, examples of each possible sub-type are given. The cases where the focus precedes *cái* are considered first.

A. Relative position of cái *and its interacting focus*
Type 1: Parametric *cái* follows its interacting focus.[2]

(1)   *Zhǐyǒu ZHÈLǏ   wǒmen cái   néng wánr.*
       only   here   we   CAI   can play
       'We can play only HERE.'

---

[2] Alleton's (1972) *cái* *I*/value II; partially Li & Thompson's (1981) backward-linking connective; Biq's (1984, 1988) parametric use; partially Lai's (1995, 1996, 1999) restrictive use.

(2)   *Xiǎo Wáng   BĀ-diǎn   cái   lái.*
       Little Wang   8-CL:o'clock   CAI   come
       'Little Wang did not come until EIGHT o'clock.'/'Little Wang came as late as EIGHT o'clock.'

(3)   *Lǎo Wáng   zhǐyǒu   ZHÈ-BĚN SHŪ   cái   mǎi.*
       Old Wang   only   this-CL book CAI   buy
       'Old Wang buys only THIS BOOK.'

In (1) a locative adverbial is in focus, in (2) a numeral within a temporal adverbial is focused.[3] In (3) the preposed definite object constitutes the *only*-focus.

Type 2: Parametric *cái* precedes its interacting focus.[4]

(4)   *Xiǎo Wáng cái   mǎi-le   YĪ-běn   shū.*
       Little Wang CAI   buy-ASP   1-CL   book
       'Little Wang only bought ONE book.'

(5)   *Xiǎo Wáng cái   QĪ-SUÌ.*
       Little Wang CAI   7-CL:year.of.age
       'Little Wang is only SEVEN YEARS old.'

(6)   *Lǎo Wáng zài   Běijīng cái   zhù-le   SĀN-NIÁN.*
       Old Wang at   Beijing CAI   live-ASP 3-CL:year
       'Old Wang lived in Beijing for only THREE YEARS.'

The focused categories in (4) through (6) include a numeral within an indefinite object nominal, a numerically quantified nominal predicate, and an adverbial complement of duration.

B. Modes of integrating the interacting focus structurally
Type 1: The focus is a (constituent of a) subordinate clause.

(7)   *Yīnwèi XIǍO WÁNG HUÌ LÁI,   nǐ   cái   xiǎng qù.*
       because Little Wang will come you   CAI   want go
       'You only want to go because LITTLE WANG WILL COME.'

(8)   *Chúfēi XIǍO WÁNG   lái,   wǒ   cái   qù.*
       only.if Little Wang   come I   CAI   go
       'Only if LITTLE WANG comes will I go.'

(9)   *Xiǎo Wáng chī-le   SĀN-ge   mántou   cái   bǎo.*
       Little Wang eat-ASP 3-CL   steamed.bun CAI   full
       'Only after Little Wang had eaten THREE steamed buns did he have enough.'

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[3] Sentence (2) instantiates Lai's temporal use.

[4] Alleton's *cái* *2*/value II; Biq's limiting use; partially Lai's restrictive use.

(10) [Talking about fines for slow driving on highways]
     Chēsù dī yú   LIÙSHÍ-gōnglǐ wǒmen cái huì bèi fā-kuǎn.
     speed lower.than 60-CL:km(/h) we   CAI can PASS fine
     'Only if we drive slower than SIXTY km/h will we be fined.'

While the whole subordinate clause is focused in (7), only parts of the
subordinate clauses are in focus in (8) through (10). Note in passing that
in (9) numbers l o w e r than 'three' are excluded as being sufficient to
make Little Wang feel full; in (10) values h i g h e r than 'sixty (km/h)'
are excluded. This observation will be relevant in section 4.1.4 when *cái*
and its interaction with scales will be discussed.

Type 2: The focus is a constituent of the clause in which *cái* is used.
Examples (1) through (6) may serve to illustrate this type.

C. (Optional) Functional elements preceding the focus

A variety of words are used to mark foci preceding *cái*. The most com-
mon ones are *zhǐyǒu* 'only (if)' and *chúfēi* 'only if'. In none of the follow-
ing examples does omitting these words render the sentences
ungrammatical (although sentences without those functional elements
may be indeterminate with respect to whether they should be taken as
conditional, causal or temporal, and although single sentences may re-
quire some context to sound natural if the *only*-word is dropped).

(11) *(Zhǐyǒu)* ZHÈLǏ   *wǒmen cái   néng wánr.*
     only   here   we   CAI   can play
     'We can play only HERE.'
(12) *(Yīnwèi)* XIǍO WÁNG   HUÌ LÁI, nǐ   cái   xiǎng qù.
     because Little Wang   will come you CAI   want go
     'You only want to go because LITTLE WANG WILL COME.'
(13) *(Chúfēi/Zhǐyǒu)* XIǍO WÁNG   lái   wǒ   cái   qù.
     only.if/only.if   Little Wang come I   CAI   go
     'Only if LITTLE WANG comes will I go.'

2.1.2   The modal use type of *cái*[5]

The modal use type is characterized by the semantic bleaching of the
auxiliary or stative verb which follows *cái*. Except for possible sentence-
final particles, nothing apart from one of the following five verbs may be
used after modal *cái* (here the basic meaning is given as a first gloss):

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[5] Cf. Alleton (1972: 138).

kěyǐ 'can', *xíng* 'be possible/o.k.', *hǎo* 'be good', *duì* 'be correct', *shì* 'be
(right)'.

(14) *Nǐ   yòng xiànqián mǎi   cái   kěyǐ   ya!*
     you   use cash   buy   CAI   can   PRT
     ≈'You must pay cash to buy it!'
(15) *Nǐ   yòng xiànqián mǎi   cái   xíng   a!*
     you   use cash   buy   CAI   possible PRT
     ≈'You must pay cash to buy it!'
(16) *Nǐ   gēn wǒ   shāngliang cái   hǎo.*
     you   with I   discuss   CAI   good
     ≈'I wish you had discussed with me.'
(17) *Nǐ   yīnggāi lái   kàn   wǒ   cái   duì.*
     you   should come see   I   CAI   right
     ≈'You should really come and see me.'
(18) *Nǐ   gāi   cángqilai cái   shì.*
     you   should hide   CAI   right
     ≈'(For that purpose) you should hide!'

The sequence '*cái* + auxiliary/stative verb' is often rendered by an ad-
verb(ial) or some embedding verb in English; cf. *I wish* and *really* in the
English translations in (16) and (17).

So far, this use has not been recognized in the literature as meriting
special attention. If it is identified at all, as is the case in Alleton's (1972)
work, it is usually subsumed under the parametric use type. This classifi-
cation is justified, but for expository reasons the modal use type is intro-
duced independently here. I will pay special attention to the modal sub-
type in section 5.2.

2.1.3   The aspectual use type of *cái*[6]

The aspectual use type of *cái* signals that the event denoted by the clause
in which *cái* is used happened a minimal time span ago with regard to the
utterance time or the reference time. Three examples are given below. In
(20) the use of *gānggāng* 'just' shows that the time of utterance is the
reference time. In (21) a temporal clause specifies the reference time.

(19) *Lǎo Wáng cái   bān-zǒu.*
     Old Wang   CAI   move-away
     'Old Wang has just moved away.'

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[6] Alleton's *cái 3*/value I; Biq's temporal use.

(20) *Lǎo Wáng gānggāng cái bān-zǒu.*
Old Wang just CAI move-away
'Old Wang has just moved away.'

(21) *Wǒ bān-lái -de shíhou, Lǎo Wáng cái bān-zǒu.*[7]
I move-come -when Old Wang CAI move-away
'When I moved here, Old Wang had just moved away.'

2.1.4 The emphatic use type of *cái*[8]

The emphatic use type of *cái* only occurs in exclamatory sentences. Apart from the independently given emphasis on the whole utterance in exclamatory sentences, three different kinds of emphasis on a lower level of constituency may be distinguished: The attention may (i) be focused on the correct identification of a referent of which some property holds, thereby rejecting a contextually salient assumption to the contrary, or that it holds true of some other referent; the attention may (ii) be focused on the identification of a particularly high degree up to which a gradable property may be ascribed to a certain referent; a proposition considered to be part of the discourse background may (iii) be rejected by way of negation. The use of the sentence-final particle *ne* is characteristic of sentences with emphatic *cái*, but it is not a necessary condition (cf. (25)).

(22) correct identification of a referent of which some property holds:
Wǒ jízào? Nǐ cái jízào ne!
I choleric you CAI choleric PRT
'(You say) I am choleric? But it's YOU who is choleric!' (hx: 77)

By way of emphatically identifying the addressee as being choleric in (22), the speaker simultaneously rejects that he is choleric or that the addressee is not choleric. Alleton (1972: 146) considers the possibility of

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[7] Sentences such as this one are systematically ambiguous. (21) can also be taken to mean 'Laowang did not move away until I moved here'. In this case we would be dealing with parametric *cái* as discussed in section 2.1.1.

[8] Alleton's *cái 4*/value III, Biq's and Lai's emphatic use. Biq's analysis of the emphatic use rests on three examples, Lai (1999) cites a single example. Both researchers aim at subsuming the emphatic use of *cái* under an overarching core meaning. In view of the fact that the meaning contributions of emphatic or modal particles like the one discussed here are extremely difficult to pin down, it remains unclear how this could be achieved by basing an analysis on just three examples, or a single example. Alleton (1972: 146f) is the only researcher I know of who bases her analysis on a larger corpus (17 examples).

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recategorizing such uses of *cái* as instances of the parametric use type (her *cái 1*/value II).

(23) Identification of a particularly high degree up to which a gradable property may be ascribed to a referent:
Nà-bù diànyǐng cái huāngdàn ne!
that-CL movie CAI ludicrous PRT
≈'How ludicrous that movie is!' (hx: 77)

(24) *Zhāng Bǐngguì mài táng cái máli ne ... !*
Zhang Binggui sell sweets CAI dexterous PRT
≈'How dexterously Zhang Binggui sells his sweets!' (hx: 77)

(23) does not just assert that the relevant movie is ludicrous, it emphasizes that the degree to which it is ludicrous exceeds the degrees of this property that may have been salient before (23) was uttered. In (24), similarly, Zhang Binggui's dexterity is claimed to be of a higher degree than background assumptions would usually allow one to infer.

(25) A proposition considered to be part of the discourse background is rejected:
a. *Wǒ cái bù pà!*
I CAI not fear
≈'How can you think I might be afraid of that?!' (hx: 78)
b. *Cái bù ne!*
CAI not PRT
≈'I tell you: no!'

The possibly implicit assumption that the speaker is afraid is emphatically rejected by using (25a), and emphatic *cái* explicitly marks the negation as a rejection. In (25b) emphatic *cái* forms part of a negation, and again it adds a strong flavour of rejection to the exclamatory utterance.

2.2 USE TYPES OF *JIÙ* 就

2.2.1 The parametric use type of *jiù*[9]

Jiù in its parametric use always interacts with a preceding focus or with a C(ontrastive)-topic in the sense of Büring (1997, to appear).[10] This inter-

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[9] Alleton's (1972) *jiù 1*/value II; Li & Thompson's (1981) backward-linking connective; Biq's (1984, 1988) parametric use; Lai's (1995, 1996, 1999) temporal and conditional uses.

[10] Büring's explication of this notion will be introduced in section 4.2.4. Büring's older (Büring 1997) term S(entence)-topic has been replaced by the more common term

acting category need not be an overt constituent of the sentence in which parametric *jiù* occurs. Since the function of parametric *jiù* (cf. section 4.2) does not seem to be lexically encapsulated in European languages, a wide variety of elements may be said to partially reflect its function in English. Varying with the context, some of these elements are *if... then*, *since... therefore*, *when*, *as soon as... immediately*, *since*, *already* or *thus/so*. In many English translations of Chinese *jiù*-sentences no segmental counterpart of parametric *jiù* may be identified. I will organize my overview of the array of contexts in which parametric *jiù* is encountered according to the following purely descriptive distinctions:

(i)   the interacting information-structural category (focus or C-topic) may be a constituent of an embedded clause, it may be a constituent of the clause in which *jiù* occurs, or it may be part of the extra-sentential context;

(ii)   the relationships among *jiù*-foci or *jiù*-C- topics and their backgrounds are mainly conditional, causal or temporal, but other types of relations do occur;

(iii) the readings of *jiù*-sentences may involve an evaluational component ('as soon as', 'as little as', etc.) or not.

I will first illustrate these major dimensions of variation with pertinent examples before turning to a peculiar construction which deserves special attention.

A. Modes of integrating the interacting focus or C-topic structurally
Type 1: The focus or C-topic is a constituent of a subordinate clause.

(26) a. ['Will you go if Little Song comes?' 'No, ...']
        Rúguǒ   LǍO LǏ   lái,   wǒ   jiù   qù.
        if   Old Li   come I   JIU   go
        'If OLD LI comes, I will go.'
     b. ['Under what circumstances will you go?']
        Rúguǒ   LǍO LǏ   LÁI,   wǒ   jiù   qù.
        if   Old Li   come I   JIU   go
        'If OLD LI COMES I will go.'
     c. ['If Little Song comes, I will stay at home, but ...']

C(ontrastive)-topic in his more recent work (Büring to appear). In the following example (taken from Büring 1997) *female* is the C-topic, and *caftans* is in focus.
(i)   Q: What did the pop stars wear?
       A: The [FEMALE]_{C-topic} *pop stars wore CAFTANS.*

        Rúguǒ   [LǍO LǏ]_{C-topic}   lái,   wǒ   jiù   QÙ.
        if   Old Li   come I   JIU   go
        'If [OLD LI]_{C-topic} comes, I will GO.'
     d. ['If Mary asks me, I may stay at home, but ...']
        Rúguǒ   [LǍO LǏ   LÁI]_{C-topic,} wǒ   jiù   QÙ.
        if   Old Li   come   I   JIU   go
        'If [OLD LI COMES]_{C-topic}, I will GO.

(26) assembles different instantiations of type 1: Either the whole subordinate clause may be information-structurally distinguished ((26b) and (26d)), or just part of it ((26a) and (26c)); moreover, the distinguished category in the subordinate clause may be a focus ((26a) and (26b)), or a C(ontrastive)-topic ((26c) and (26d)). If a C-topic occurs, some constituent to the right of *jiù* is in focus. For reasons to become clear in section 4.2.4, sentences with parametric *jiù* often contextualize more readily if *jiù* interacts with a C-topic, instead of a focus. In the remainder of this section I will either present examples with C-topics or with foci that interact with *jiù* without further commenting on this difference.

Type 2: The focus or C-topic is a constituent of the clause in which *jiù* is used.

(27) [MÍNGTIĀN]_{C-topic} wǒ   jiù   QÙ   SHÀNG   KÈ.
      tomorrow   I   JIU   go   go to   class
      '[TOMORROW]_{C-topic} I will GO TO CLASS.'

(28) *Yóuyú   Rìběn   [SHÈHUÌ JĪNGJÌ]_{C-topic} -de   dìguózhǔyì*
      due.to Japan   society economy   -ATTR   imperialism
      jiù   chǎnshēng-le   Rìběn   ZHÀNZHĒNG-de   dìguózhǔyì.
      JIU   produce-ASP   Japan   war-ATTR   imperialism
      'From Japan's imperialism in [SOCIETY AND ECONOMY]_{C-topic}, its imperialism in WARFARE follows.' (ad. Alleton 1972: 155)

(29) *Wǔ-ge   rén   jiù   gòu.*
      5-CL   people JIU   enough
      'FIVE people are enough.'

Example (27) has a temporal C-topic which interacts with *jiù*, while the C-topic in (28) is part of a causal prepositional phrase. In both cases adverbial information is encoded without clausal subordination. In (29) part of a non-referential subject nominal is in focus.

Type 3: *Jiù* interacts with an extra-sentential or implicit C-topic.[11]

(30)   [Wenling considers having a fortune teller remove an allegedly un-
lucky mole from her face. Her brother refuses to encourage her.]
Brother:
Suí nǐ, suí nǐ!   Nà   shì   nǐ   zìgěr-de   shìqing!
as.you.like   that   be   you   personal-ATTR   matter
'As you like! That's your own business!'
Wenling:
Xiàngmìng xiānsheng, wǒ jiù QǏNG NǏ   BĀNG WǑ   DIǍN-DIÀO.
fortune.teller mister   I   JIU ask   you   help   I   cut-off
'Mister Fortune-teller, [[THIS BEING SO]C-topic] I'm ASKING YOU TO
REMOVE IT FOR ME.' (rp: 22)

(31)   [Two children are negotiating about what to play. One of them
suggests to play hopscotch.]
Nǐ   bù   shì   zuì   xǐhuan   wánr tiào   fángzi   ma?
you   not   be   most   like   play jump   house   PRT
'Don't you like playing hopscotch most?'
Wǒmen jiù   ZÀI   ZHÈ-GE   RÉNXÍNGDÀO-HÓNG-ZHUĀN
we   JIU   at   this-CL   pavement-red-brick
SHÀNGMIÀN wánr, hǎobuhǎo?
surface   play   okay
'[[THIS BEING SO]C-topic] Let's play ON THE RED SLABS OF THIS
PAVEMENT, okay?' (rp: 1)

In (30) *jiù* links the content of Wenling's statement to something uttered
by her brother: 'Since making a decision about having the fortune teller
remove my unlucky mole is my own business, I'm making up my mind to
ask the fortune teller to perform his little surgery'; that is a possible spell-
out of the way Wenling's utterance links up with the prior discourse, and
jiù is a reflex of this relationship. *Jiù* in (31) relates back to the prior
question in a comparable way: 'As my play-mate likes to play hopscotch
most of all things, we can play the game on this pavement'.

B. Variation among the constituents that host the foci or C-topics

(32)   a.   *Rúguǒ   [XIǍO WÁNG]C-topic lái,   wǒ   jiù   QÙ.*
if   Little Wang   come I   JIU   go
'If [LITTLE WANG]C-topic comes, I will GO.'

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[11] Cf. Alleton (1972: 149). The bracketed small-font C-topics in the translations of (30)
and (31) are implicit in the Chinese sentences.

b.   *Yào bù shì [TĀ GÀOSU   WǑ]C-topic, wǒ   jiù BÙ ZHĪDAO.*
if   not be he tell   I   I   JIU not know
'If [HE HADN'T TOLD ME]C-topic, I WOULDN'T HAVE KNOWN.'
(ad. Eifring 1995: 283)

c.   *Yīnwèi   XIǍO WÁNG   LÁI,   wǒ   jiù   qù.*
because Little Wang   come I   JIU   go
'I'm going because LITTLE WANG IS COMING.'

d.   *Wèile   QUÁN   CHǍNG-DE   LÌYÌ,*
for.sake.of whole factory-ATTR   benefit
wǒmen   jiù   ZUÒ YĪ-DIǍN XĪSHĒNG ba!
we   JIU   make 1-CL:bit sacrifice PRT
'For the sake of THE WHOLE FACTORY'S BENEFIT, let's MAKE
A SACRIFICE!' (hx: 346)

e.   *[XIǍO WÁNG   LÁI]C-topic -de shihou wǒ   jiù   ZǑU.*
Little Wang   come   -when   I   JIU   go.away
'When [LITTLE WANG CAME]C-topic I LEFT.'

f.   *[XIǍO WÁNG   YĪ   LÁI]C-topic, wǒ   jiù   ZǑU.*
Little Wang   as.soon.as come   I   JIU   go.away
[AS SOON AS LITTLE WANG CAME]C-topic I LEFT.'

g.   *[CÓNGCǏ]C-topic Lǎo Wáng jiù BÚ ZÀI   TÍQǏ   LǍO SÒNG.*
since.then   Old Wang   JIU not again mention Old Song
'[SINCE THEN]C-topic Old Wang DIDN'T TALK ABOUT OLD SONG
ANYMORE.' (ad. Alleton 1972: 21)

h.   *Xiǎo Wáng   MǍSHÀNG   jiù   lái.*
Little Wang   immediately   JIU   come
'Little Wang will come IMMEDIATELY.'

i.   *Zài   ZHÈ-GE   DÌFĀNG wǒmen jiù   néng   wánr.*
at   this-CL   place   we   JIU   can   play
'We can play HERE.'

The sentences in (32) cover a wide range of constituent types in which
foci or C-topics interacting with *jiù* may occur. (32a) and (32b) have
conditional subordinate clauses; the first one receives a potential reading,
in the second one the reading is counterfactual. (32c) is an example of a
causal clause. The prepositional phrase adverbial in (32d) has a pur-
posive interpretation. The examples in (32e-h) are temporal: In (32e) the
reference time is indicated by the adverbial (clause); the use of *yī* 'as
soon as' in (32f) triggers an interpretation of extreme immediacy; the
time adverbial in (32g) divides the past into two complementary stretches
of time, the later one of which is characterized by the fact that Old Wang
has not mentioned Lao Song anymore; in (32h) a deictic time adverbial in
focus expresses that Little Wang's arrival will happen in the immediate

future. (32i), finally, has a local adverbial in focus. In all of these sentences *jiù* somehow links the information-structurally distinguished element and the main predication.

C. The presence or absence of evaluational components of meaning

(33) [Context 1: Old Wang always arrives late for work. Sometimes he doesn't show up until 11 o'clock. Today was different, ...
Context 2: Old Wang got up at six, took the bus at 6.30, and ...]

tā	qī-diǎn	jiù	zài	bàngōngshì	le.
(s)he	7-CL:o'clock	JIU	at	office	PRT

Context 1: '...he was in his office as early as seven o'clock.'
Context 2: '...at seven o'clock he was in his office.'

(34)
Nǐ	YĪ-CÌ	jiù	mǎi	YĪBǍI-JĪN	dà	báicài	....
you	1-CL:time	JIU	buy	100-CL:pound	big	cabbage	

'On A SINGLE OCCASION you are buying as much as A HUNDRED POUNDS of cabbage, [...]?' (cf. hx: 346)

(33) is a sentence which admits of two different readings. Each of the two preceding contexts triggers one reading. While the second reading does not involve any evaluation as to whether seven o'clock is early or late, the first reading clearly has it that seven o'clock is an early point in time to start working. For the first reading to become possible, some part of the sentence to the right of *jiù* must be in focus. In (34) a minimal focus amount ('a single occasion') corresponds to an extremely large scalar value in focus ('a hundred pounds'). A non-evaluational reading is difficult to construe.

D. 'The jiù of twin variables'

(35) a.
Tā	ài	mǎi	*shénme*,	jiù	mǎi	*shénme*.
(s)he	like	buy	what	JIU	buy	what

'She will buy what she wants to buy.' (cf. hx: 346)

b.
Nǐ	xiǎng	gēn	*shéi*	jiàn miàn, jiù	gēn	*shéi*	jiàn miàn.
you	want	with	who	meet JIU	with	who	meet

'Meet who you want to meet.'

c.
Tā	xūyào	*jǐ-ge/duōshao*,	jiù ná	*jǐ-ge/duōshao*.
(s)he	need	how.many-CL/how.much	JIU take	how.many-CL/how.much

'(S)he takes as many/as much as (s)he needs.'

d.
Wǒmen	dìng-hǎo-le	*nǎ-tiān*,	wǒ	jiù	*nǎ-tiān*	qù.
we	decide-good-ASP	which-day	I	JIU	which-day	go

'I'll go on the day that we have decided upon.'

e.
Zhè-ge	zǐ	zǐdiǎn-shang	*zěnme*	xiě,
this-CL	character	dictionary-in	how	write

nǐ	jiù	*zěnme*	xiě!
you	JIU	how	write

'Write the character as in the dictionary.'

f.
Nǐ	xiǎng	*shénme shíhou*	zǒu,	jiù	*shénme shíhou*	zǒu.
you	want	what time	go.away	JIU	what time	go.away

'(You should) Leave when you want to leave.'

g.
Tā	ài	shàng	*nǎ-lǐ*,	jiù	shàng	*nǎ-lǐ*.
(s)he	like	go.up	which-place	JIU	go.up	which-place

'(S)he climbs up where (s)he wants to climb up to.' (hx: 346)

Sentences characterized by the '*jiù* of twin variables' have the following properties: The same indefinite pronominal or *wh*-word (underlined in (35)) must occur twice; one of the occurrences precedes *jiù* in a subordinate clause, the other one follows *jiù* as a constituent of the superordinate clause; the subordinate predication restricts the interpretation of the variable, i.e. the *wh*-word or indefinite pronominal, in the embedding clause. Translational equivalents of the subordinate clauses in English and other European languages are called 'indirect relative clauses' (cf. Lehmann 1984) or 'free relative clauses'. Any Mandarin *wh*-word/indefinite pronominal may be used in this construction. Sentences as in (35) have sometimes been discussed in the context of so-called donkey anaphora in the semantics literature dealing with the correct interpretation of pronominal expressions (cf. Tsai 1994, Cheng & Huang 1996, Lin 1996: ch. 5 or Chierchia 2000).

2.2.2 The modal use type of *jiù*[12]

The modal use type of *jiù* has properties that are parallel to those of *cái*'s modal use type (cf. section 2.1.2): Semantic bleaching of the auxiliary or stative verb following *jiù*; except for sentence-final particles no other elements apart from the five verbs *kěyǐ* 'can', *xíng* 'be possible/o.k.', *hǎo* 'be good', *duì* 'be right', *shì* 'be (right)' may be used behind *jiù*; translational equivalents in English and other languages are usually construed slightly differently.

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[12] Cf. Alleton (1972: 151). Alleton notices this use type, but she subsumes it under her *jiù 1*/value II, i.e. my parametric use type. Basically, I think Alleton's decision is correct, but as with the modal use type of *cái* (cf. section 2.1.2), I have decided to present this sub-type separately.

(36) *Měi-wèi*   *fù*   *sìqiān-kuài*   *jiù*   *kěyǐ*   *le.*
      every-CL:honorable.person pay 4,000-CL:MU JIU   can   PRT
      ≈'It will do if each of you pays 4,000 Kuai.'

(37) *Lüè* *shuō* *yi* *shuō* *jiù* *xíng* *le.*
      brief talk   1   talk   JIU   possible PRT
      ≈'Let's briefly talk it over a bit.' (Alleton 1972: 198)

(38) *Nǐ* *zhīdao* *jiù* *hǎo* *le.*
      you   know   JIU   good   PRT
      ≈'I'm glad you know it.'/'I wish you knew it.'

(39) *Nǐ* *juān-chu* *zhè-bǐ* *qián* *jiù* *duì* *le.*
      you   donate-out this-CL:sum money JIU   right PRT
      ≈'You should have donated this money.'

(40) *Wǒ* *zǒu-guo-qu* *jiù* *shì* *le.*
      I   go-over-there JIU   right PRT
      ≈'(To achieve what I want) I'll simply walk over.'

As in the case of modal *cái*, it is difficult to determine the overall impact of *jiù* in the modal use type. I will return to this problem in section 5.2.

2.2.3   The aspectual use type of *jiù*[13]

The aspectual use type of *jiù* signals that the event denoted by the clause in which *jiù* is used will happen within a minimal time span with regard to the utterance time or the reference time.

(41) *Wǒ* *jiù* *huí-lái.*
      I   JIU   return-come
      'I'll come back immediately.'

(42) *Tā* *jìn-lái-de shíhou,* *Lǐsì* *jiù* *yào* *zuò-xià* *le.*
      (s)he enter-come-when   Lisi   JIU   want sit-down   PRT
      'When (s)he came in, Lisi was about to sit down.' (Biq 1988: 84)

2.2.4   The emphatic use type of *jiù*[14]

The common denominator of all occurrences of emphatic *jiù* seems to be a strengthening of the illocutionary force of assertions. This heightened claim of veracity makes utterances with emphatic *jiù* apt to be used in contexts in which a surprising property is ascribed to a referent or in which the strong assertion is meant to substitute for an explanation. Two

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[13] Alleton's *jiù 3*/value I; Biq's temporal use.
[14] Partially Alleton's *jiù 2*/value III; Biq's and Lai's emphatic use.

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pertinent examples are given in (43) and (44).

(43) *Nèi-ge* *chuān* *lǜ* *kùzi-de* *guàiwù*
      that-CL   wear   green trousers-attr eccentric
      jiù *shì* *wǒde* *Déwén* *lǎoshī!*
      JIU   be   my   German   teacher
      '[Believe it or not:] That eccentric with the green trousers is my German teacher!'

(44) [A: Why aren't you going to the movies with us?]
      B: *Wǒ* *jiù* *bù* *qù.*
         I   JIU   not   go
      B: 'I'm simply not going.'

2.2.5   The focusing use type of *jiù*[15]

The focusing use of *jiù* as in (45) is consistently translated into English as *only* or *merely*.

(45) *Wǒ* *jiù* *KÀN-JIÀN* *DÌ-YĪ-GE* *RÉN.*
      I   JIU   see-perceive ORD-1-CL   person
      'I've only SEEN THE FIRST PERSON[, but I HAVEN'T OPENED THE DOOR YET].' (cf. Biq 1984: 40)

In a way, it is surprising that this use of *jiù* should exist. The element which is usually discussed in the context of *only*-meanings is *cái*, and not *jiù*. Nevertheless, the focusing use of *jiù* with the meaning 'only' cannot be explained away. All researchers who have dealt with the meaning of *jiù* have recognized it, though its classification varies greatly (cf. footnote 15). Sometimes it is regarded as a dialectal peculiarity of Beijing (Alleton 1972: 159, Paris 1981: 333). In order to single out the focusing use of *jiù* in a way which allows me to disregard it in my further treatment of parametric *jiù*, I will list the main differences between parametric *jiù* and parametric *cái*, *dōu* and *yě* on the one hand, and the focusing use of *jiù*

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[15] Partially Alleton's *jiù 2*/value 3; Biq's limiting use; Lai's restrictive use. The different classifications with regard to this use yield a confusing picture indeed, particularly if they are contrasted with the classifications of my parametric *cái*-uses in which the focus follows *cái* (cf. 2.1.1.B). Alleton puts the focusing use type of *jiù* in a single category with my emphatic use. Since her post-verbal *cái*-uses (*cái 2*) are classified as a sub-type of what I call the parametric use, *only*-interpretations of *jiù* and *cái* end up in different classes. The same is true of the present study, but in my classification I distinguish a special focusing use type of *jiù* which is not a sub-case of the emphatic use type. Biq and Lai treat focusing uses of *jiù* on a par with cases in which the focus follows parametric *cái*. I claim that my classification is the one which rests on the most explicit criteria. Alleton's account is the one which is most similar to mine.

on the other:

(i)   focusing *jiù* is always stressed, whereas parametric *jiù, cái, dōu* and *yě* never are;

(ii) the interacting focus of focusing *jiù* invariably follows *jiù*, whereas most foci interacting with the parametrically used words precede them;

(iii) As illustrated in (45), the whole transitive VP/IP following focusing *jiù* may be in focus, whereas this is not possible if the focus follows parametric *cái*.[16]

Properties (ii) and (iii) are what we expect of a word that is categorially and functionally similar or identical to words like English *only*. The first property is a bit special, and I have nothing to say about it. The fact that (ii) and (iii) conform so well to what our expectations about focus particles like *only* are, and the fact that the parametric use of *cái, jiù, dōu* and *yě* has so many puzzling sides to it, can be taken as good grounds for generally separating the two from each other. More examples of the focusing use of *jiù* are given in (46) (note the adnominal position in (46b) and the ad-prepositional-phrase position in (46c), another property that is never encountered with parametric *cái, jiù, dōu* or *yě*).

(46) a. *Yībǎi   gōngchǐ jiù   pǎo-le   SHÍ ÈR-MIǍO.*
          100   metre   JIU   run-ASP 12-second
          'You've run the 100 metres in only TWELVE SECONDS.'
          (hx: 347)

      b. *Jiù   Nǐ   cōngming, jiù   Nǐ   nénggàn,*
          JIU   you   intelligent JIU   you   competent
          bié-rén   dōu   bù   jí   nǐ.
          other-people   all   not equal   you
          'Only YOU are intelligent, only YOU are competent, nobody else can compare to you.' (hx: 347)

      c. *Wǒ qiánmian, jiù lí   wǒ yǒu QĪ-, BĀ-BÙ   yuǎn,*
          I front   JIU from I   exist 7- 8-CL:step away
          zhàn-zhe   yī-qún   rén.
          stand-ASP   1-CL:group people

---

[16] Biq (1984: 40) claims that foci such as the one in (45) are also possible with parametric *cái*. I have not been able to confirm this judgement with my consultants. The largest possible focus constituent in (45) is the direct object; cf. (i).

(i)   *Wǒ   cái   kàn-jiàn   DÌ-YĪ-GE   RÉN.*
      I   CAI   see-perceive ORD-1-CL   person
      'I only see THE FIRST PERSON[, but I DON'T see THE CAR].'

      'In front of me, in a distance of only SEVEN OR EIGHT STEPS, was standing a group of people.' (Alleton 1972: 158)

2.2.6   Other use types of jiù

Two more function word uses of what is written with the same character must be distinguished: A subordinating use translating as *even if*, and a prepositional use meaning 'concerning', 'about' or 'on'; cf. (47) and (48). More on the subordinating use will be said in section 4.3.5.B.

(47) *Nǐ   jiù   bù   shuō, wǒ   yě   huì   zhīdao.*
      you   JIU   not   say   I   YE   will know
      'Even if you don't say it, I will get to know it anyway.' (XHDC: 441)

(48) *Shuāngfāng jiù gòngtóng guānxīn-de   wèntí jìnxíng-le huìtán.*
      both.sides JIU together concern-ATTR problem hold-ASP talks
      'Both sides had talks with each other about problems of mutual interest.' (XHDC: 441)

2.3   USE TYPES OF *DŌU* 都[17]

2.3.1   The parametric use type of dōu[18]

Dōu in its parametric use occurs in contexts of large structural diversity. The common denominator of all occurrences is the fact that parametric *dōu* must be preceded by a focus. This is reminiscent of the case of parametric *jiù*. I will refrain from giving a rough translation at this point because of the multitude of relevant contexts.

The conspectus in this section is arranged in accordance with the following descriptive distinctions:

(i)   the interacting focus may be a constituent of an embedded clause, or it may be a constituent of the clause in which *dōu* occurs;

(ii) the interacting focus may be, but it need not be, marked by one of a limited set of special functional elements preceding it;

(iii) the interacting focus may be, but it need not be, a negative polarity item;

(iv) the interacting focus may be a negated verb or verb-object compound similar in function to a negative polarity item;

(v)   in a distinct kind of sentence, parametric *dōu* relates back to a *wh*-word/indefinite pronominal or to a disjunction.

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[17] Shyu (1995), Huang (1996) or Mok & Rose (1997) do not assume ambiguity among the different uses of *dōu*. Alleton (1972), Sybesma (1996) and Zhang (1997) distinguish different *dōu*'s. Cf. section 4.3.1 for arguments in favour of several use types.

[18] Alleton's (1972) *dōu* 2/value II; Zhang's (1997) additive focus particle.

In the sub-sections to follow I will present examples to illustrate each dimension of variation separately.

A. Parametric dōu and foci in subordinate clauses, or dōu and the focus as clausemates

Type 1: The focus is a (constituent of a) subordinate clause.

(49) a. *Jíshĭ   GUÓWÁNG LÁI, wŏ dōu bù huì qù.*
     even.if king   come I   DOU not will go
     'Even if THE KING COMES I won't go.'

   b. *Jíshĭ   Lăo Lĭ DUÌ WŎ DÀOQIÀN,*
     even.if Old Li to   I   apologize
     wŏ dōu bù huì yuánliàng tā.
     I   DOU not will forgive   (s)he
     'Even if Old Li APOLOGIZES TO ME, I won't forgive him.'

   c. *Jiù lián wŏ ZHÙ ZÀI BĔIJĪNG -de shihou,*
     even   I   live at   Beijing -when
     tā dōu bù gēn wŏ zhù zài yìqĭ.
     (s)he DOU not with I   live together
     'Even when I LIVED IN BEIJING (s)he didn't live together with me.'

In (49a) the whole subordinate clause except for the subordinating particle *jíshĭ* 'even if' is in focus. A possible context would be *Will you go if the Prime Minister invites you? – No, even if the king comes I won't go.* (49b) with the predicate in focus would, on the other hand, be appropriate in a context in which more subtle ways of Old Li's trying to appease the speaker have already been discussed: *Inviting me for dinner won't do, and even if he apologizes to me I won't forgive him.* (49c) is an example in which part of a temporal clause is in focus, while the preceding two subordinate clauses were conditional clauses.

Type 2: The focus is a constituent of the clause in which *dōu* is used.

(50) a. *Lián NÚWÁNG dōu huì lái.*
     even queen   DOU will come
     'Even THE QUEEN will come.'

   b. *Dìdi   lián BĪNGQÍLÍN dōu bù xiăng chī.*
     younger.brother even ice-cream DOU not want   eat
     'The little brother doesn't even want to eat ICE-CREAM.'

   c. *Lăolĭ lián XĪNGQĪTIĀN dōu gōngzuò.*
     Old Li even Sunday   DOU work
     'Old Li works even on SUNDAYS.'

   d. *Lián GĀOSHĀNDÌ-SHANG-de   shuĭ dōu bù gānjìng.*
     even high.mountains-on-ATTR water DOU notclean
     'Even the water IN THE HIGH MOUNTAINS is not clean.'

In (50a) the subject nominal is in focus, in (50b) the same applies to the preposed object nominal. (50c) and (50d) have time and place words in focus.

B. (Optional) Functional elements preceding the focus

In all of the sentences in A. immediately above, either *jíshĭ* 'even if/when' or *lián* 'even' preceded the focus. Given contexts that are sufficiently rich, all of the examples in A. are also good without *jíshĭ* 'even if' or *lián* 'even'. More examples involving such (optional) elements are given in (51). I will gloss all of them as *even (if)*, even though a fine-grained analysis would bring to light subtle differences (cf. Eifring 1995 and section 4.3.5.B).

(51) a. *(Năpà   shì) LĂOBĂN wŏ dōu bù xiăng jiàn.*
     even.if be   boss   I   DOU not like see
     'I even don't want to see THE BOSS.'

   b. *(Jiùshì) DÀ XUĔ dōu bù néng liú-zhù wŏ.*
     even   big snow DOU not can   stay-stop I
     'Even HEAVY SNOW can't stop me.'

   c. *(Rènpíng) MÍNG-YĪ   GĀO-SHŎU dōu zhìbuhăo.*
     even   famous-doctor master-hand DOU unable.to.cure
     'Even FAMOUS AND HIGHLY SKILLED DOCTORS are unable to cure it.' (ad. Eifring 1995: 178)

C. Negative polarity items in focus

The sentences in A./B. have lexical open-class elements in focus. Contrary to those, the examples in (52) have negative polarity items in focus.

(52) a. *Lăo Lĭ lián YĪ-JÙ   HUÀ dōu shuōbuchūlai.*
     Old Li even 1-CL:speech.unit speech DOU not.be.able.to.speak
     'Old Li couldn't even say A WORD.'

   b. *Wŏ yáchi YĪ-DIĂNR   dōu bù tòng.*
     I   tooth 1-CL:a.bit   DOU not hurt
     'My tooth doesn't hurt THE SLIGHTEST BIT/AT ALL.'

   c. *Nĭ méi yŏu shàng chuán,*
     you not have go.up boat
     lián chuán-de YĬNGZI dōu méi kàndào.
     even boat-ATTR shadow DOU not.have see
     'You've never been aboard, you haven't even seen THE SHADOW of the/a boat yet.' (ad. rp: 52)

d. *Jiù   shèhuì-de   kŭ,*
   old   society-ATTR   hardship
   wŏ   YŎNGYUĂN   dōu   bù   huì   wàngjì.
   I   ever   DOU   not   will   forget
   'NEVER EVER will I forget the sufferings in the old society.'

(52a) and (52b) focus on measure phrases denoting a minimal amount of speech and a minimal degree of a property, respectively. In (52c), the element *yĭngzi* 'shadow' is used in a bleached sense to denote a minimal amount of experience with something, a boat in our case. In (52d) *yŏng-yuăn* is a negative polarity item much like English *ever*.

D. Verbal elements in focus

The examples considered so far never involved the focusing of verbal elements, unless they were constituents of subordinate clauses. Cases in which only verbal elements in *dōu*-clauses are in focus do occur, though, but in this case verb copying is required, the sentences are invariably negated, and resultative elements are never focused.

(53) a. *Lăo Sōng   DÒNG   dōu   bu   dòng.*
        Old Song   move   DOU   not   move
        'Old Song doesn't even MOVE.'

     b. *Tā   CHŪ   QÌ   dōu   chūbushànglai.*
        (s)he   go.out   breath   DOU   not.manage.to.breathe
        'He didn't even manage to BREATHE.' (ad. Alleton 1972: 80)

(53a) with an intransitive verb in focus is a simple case: The verb in the canonical verbal position behind *dōu* is a dummy place-holder, whereas the same verb preceding *dōu* bears focal stress. The sentence in (53b) has a more intricate structure. Here, too, the motion verb *chū* 'to go out (in this case, of breath), to breathe' precedes *dōu*, and it is followed by an object in the focus position. In the post-*dōu* position, the same verb is, however, followed by a complex modalizing resultative ending. Semantically, the verbal elements in focus may be characterized as verbal negative polarity items.

E. Parametric dōu *relates back to a wh-word/indefinite pronominal, or to a disjunction.*[19]

Type 1: Parametric *dōu* relates back to a *wh*-word/indefinite pronominal.

(54) a. *SHÉI   dōu   zhīdao   zhè   shì   Lăo Sōng-de   shēngyīn.*
        who   DOU   know   this   be   Old Song-ATTR   voice
        'EVERYBODY knows this is the voice of Old Song.'
        (ad. Alleton 1972: 66)

     b. *Tā   SHÉNME   dōu   ài   chī.*
        (s)he   what   DOU   like   eat
        '(S)he likes to eat ANYTHING.'

     c. *Lăo Zhāng   SHÉNME SHÍHOU   dōu   yŏu   gōngfu.*
        Old Zhang   when   DOU   have   time
        'Old Zhang ALWAYS has time.'

     d. *Nèi-xiē   pixié,   NĚI-SHUĂNG   dōu   bù   héshì.*
        that-CL:some   shoe   which-CL:pair   DOU   not   fit
        'Among these shoes, there's NO PAIR WHATSOEVER that fits.'

     e. *Xiăo   sōngshŭ   pá-de   hěn   kuài,*
        little   squirrel   climb-CSC   very   fast
        yīshí   ZĚNME   dōu   dăibuzhù.
        momentarily   how   DOU   not.be.able.to.catch
        'The little squirrel was climbing very fast, and for the time being there was NO WAY to catch it.' (ad. hx: 620)

As long as the *wh*-word/indefinite pronominal precedes *dōu*, any syntactic function may interact with *dōu*: Subjects in (54a) and (54d), an object in (54b), and adverbials in (54c) and (54e). The markers of universal quantification present in the English translations do not correspond immediately to the use of the *wh*-words/indefinite pronominals, but rather to the interaction of these elements with parametric *dōu* and negation (see sections 4.3.3. and 4.3.4).

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[19] More recent treatments sometimes subsume this use under *dōu*'s distributive use as presented in section 2.3.2 (Lin 1996). Others deny the necessity to distinguish different use types of *dōu* altogether (Shyu 1995, Huang 1996). Note that although I have not clarified the theoretical status of all use types that are discussed in this chapter, I claim that setting apart the parametric use type of all the investigated particles is justified and necessary (cf. section 2.5). On this point, see also the discussion in section 4.3.1.

It should moreover be noted at this early point that I will distinguish two different sub-cases of parametric *dōu* as in (54): Sentences with negative-polarity interpretations, and sentences with free-choice interpretations (cf. sections 4.3.3 and 4.3.4).

Type 2: Parametric *dōu* relates back to a disjunction.

(55) a. *Tā   lái   bu   lái,   dōu méi yǒu guānxi.*
          (s)he come not come DOU nothave relation
          'Whether (s)he comes or not doesn't matter. (hx: 163)

      b. *Kàn bu   kàn, wǒ   dōu wúsuǒwèi.*
          see not see   I   DOU not.care
          'Whether I see it or not, I don't care.' (hx: 163)

These type-2 sentences contain question-like disjunctive parts. In (55a) the disjunctive part is a subject, while in (55b) it does not express a core relation of the main predicate *wúsuǒwèi* 'not care'. Since the representation of information-structural facts in these sentences is especially dependent on their analysis, no focus-background structure has been marked in (55).[20]

There are a handful of functional elements that may be used preceding either the *wh*-word/indefinite pronominal (type 1), or preceding the disjunctive constituent (type 2): *wúlùn, bùguǎn* and *rènpíng* are probably the most frequent ones, and all of them are translatable as *no matter*. (56) through (58) illustrate the use of each word using modified old examples.

(56) *Wúlùn   SHÉI dōu lái   le.*
      no.matter   who   DOU come PRT
      'EVERYBODY came.' (cf. (54a))

(57) *Lǎo Zhāng rènpíng   SHÉNME SHÍHOU   dōu yǒu   gōngfu.*
      Old Zhang no.matter   when   DOU have time
      'Old Zhang ALWAYS has time.' (cf. (54c))

(58) *Bùguǎn tā   lái   bu   lái,   dōu méi yǒu guānxi.*
      no.matter(s)he come not come DOU not have relation
      'Whether (s)he comes or not doesn't matter.' (cf. (55a))

2.3.2   The distributive use type of *dōu*[21]

The distributive use type of *dōu* is by far the most frequent one. In sentences in which it occurs, distribution over some preceding plural entity in the same clause is expressed, i.e. the predication is true of every atomic subpart of the plural entity with which distributive *dōu* interacts. Its meaning thus resembles English adverbial *all* or *each*. Representative examples include the following:

(59) a. *Tāmen dōu mǎi-le   yī-bù   chēzi.*
          they   DOU buy-ASP 1-CL   car
          'They all bought a car.' (Lin 1998: 201)

      b. *Nà-běn shū,   wǒ   dōu kàn-wán-le.*
          that-CL book   I   DOU read-finish-ASP
          'I finished reading (all parts of) that book.' (Lin 1998: 202)

      c. *Tā   zuótiān/nèi-jǐ-tiān   dōu zài jiā.*
          (s)he yesterday/that-some-day DOU at   home
          '(S)he was at home all day yesterday/in all those days.'
          (cf. Lin 1998: 212)

The plural subject argument is distributed over by *dōu* in (59a), i.e. each single person bought a car, and it is not the case that a collective car was purchased. In (59b) the preposed object argument is distributed over. What complicates this case is the fact that although a single book is involved in the action distribution over something must be traceable. Of course, books can be argued to have sub-parts over which it is possible to distribute. In (59c) analogous facts are presented for (temporal) adverbials: The plural adverbial *nèi-jǐ-tiān* 'those couple of days' is a straightforward case, while for the interaction of *zuótiān* 'yesterday' with *dōu* to be possible in a distributive sense, distribution over all sub-parts of 'yesterday' is required.

2.3.3   The emphatic use type of *dōu*[22]

Clauses with *dōu* in its emphatic use always end in the sentence-final particle *le*, which signals a 'currently relevant state' (Li et al. 1982). *Dōu... le* may often be rendered as *already* in English. Consider the examples in (60).

(60) a. *Māma dōu LIÙSHÍ-DUŌ-SUÌ-de   rén   le,*
          mum   DOU 60-odd-CL:year.of.life-ATTR   person   PRT
          hái   ràng tā   dài   háizi.
          still make she look.after   child
          'Mum is a person of more than SIXTY YEARS already, and you
          still have her look after the kids!' (hx: 166)

      b. *Dōu SHÍ-DIǍN   le,   zěnme hái bù   lái?*
          DOU 10-CL:o'clock PRT   how   still not   come
          'It's TEN O'CLOCK already, how come he still doesn't come?'
          (hx: 166)

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[20] See section 4.3.4 for discussion.

[21] Alleton's *dōu1*/value 1; Lin's (1996, 1998) generalized distributivity operator.

[22] Alleton's *dōu3*/value III.

c. *Míngtiān   zhè-huìr   wǒ dōu zài   SHÀNGHǍI   le.*
   tomorrow   this-CL:moment I   DOU at   Shanghai   PRT
   'Tomorrow by this time, I will be in SHANGHAI already.'
   (ad. hx: 166)

Dōu... le in (60a) is interpreted in such a way that being sixty-something
is old if judged against the background of the usual age of people attend-
ing children. Likewise, ten o'clock is signalled to be (contextually) late in
(60b). In (60c) the short temporal distance between the time of utterance
and the following day is contrasted with the major change in location to
come about for the speaker in the course of the next 24 hours. This is
very much in line with what *already* in English and comparable phase
adverbs in other languages mean.

Note that *dōu* thus presents itself with a split similar to the ones found
with *jiù* and, less clearly so, with *cái* (see sections 2.1.1 and 2.2.5): In its
parametric use, the interacting focus precedes *dōu*; there is one use,
namely the very use treated here, which differs from the parametric use in
that the interacting focus always follows *dōu*. In the case of *jiù*, differ-
ences in meaning and intonation, among other things, have helped to jus-
tify the delimitation of two different uses despite the complementarity of
their distributions. In the case of *cái*, on the other hand, pre-*cái* foci and
post-*cái* foci were both taken to interact with a single use type of *cái*, viz.
the parametric use. This decision was based mainly on the interpreta-
tional identity of the two positional variants of the *cái*-foci under debate.
In the present case the facts are less clear-cut: Tempting though it may
seem to assimilate the case of *dōu*'s emphatic use type either to the situa-
tion found with *cái* (subsumption under the parametric use) or the case of
jiù (delimitation of a focusing use type different from the parametric use),
I see no way to achieve this. If the *cái*-solution were to be entertained, we
should be able to demonstrate that the meaning *dōu(... le)* in (60) contrib-
utes to the sentence meanings equals that of *dōu* in its parametric use.
Even if we do not go into the details of semantic analysis put forward in
ch. 4, it appears plausible at this early point to say that *already*, as op-
posed to *even* (the most common translational constant in parametric *dōu*
sentences), is a fairly dissimilar notion. Moreover, neither with paramet-
ric *cái* nor with parametric *jiù* could a strict co-occurrence relation with a
specific sentence-final particle be established as we find it in the case of
emphatic *dōu... le*. If assimilating the emphatic use of *dōu* to parametric
cái with following foci leads nowhere, we could perhaps establish a link
between emphatic *dōu* and the focusing use of *jiù*. In the end, both focus-
ing *jiù* and emphatic *dōu* are obligatorily followed by foci. However, this

way out is likewise blocked: The characteristic properties of the focusing
use of *jiù* included obligatory stress on *jiù*. *Dōu* in its emphatic use must
not be stressed, so the phenomenon must be of a different kind.

I will leave it at that since my main concern here is to single out the
parametric use among the other uses. This can be done with sufficient
certainty, whereas the question of how to categorize *dōu... le* properly
may await a more detailed investigation.

2.4 USE TYPES OF *YĚ* 也

2.4.1 *The parametric use type of* yě[23]

The distribution of parametric *yě* overlaps heavily with that of parametric
dōu. Therefore, the following survey makes use of the same grid of expo-
sition put to use in section 2.3.1 where parametric *dōu* was introduced.

(i)   the interacting focus may be a constituent of an embedded clause,
      or it may be a constituent of the clause in which *yě* occurs;
(ii) the interacting focus may often be, but it need not be, marked by
      one of a limited set of special functional elements;
(iii) the interacting focus may be, but it need not be, a negative polar-
      ity item;
(iv) the interacting focus may be a negated verb or verb-object com-
      pound similar in function to a negative polarity item;
(v)   in a distinct kind of sentence, parametric *yě* relates back to a *wh*-
      word/indefinite pronominal or to a disjunction.

Once more, these dimensions of variation will be illustrated one by one.

A. Parametric yě *and foci in subordinate clauses, or* yě *and the focus as
clausemates*

Type 1: The focus is a (constituent of a) subordinate clause.

(61) a. *Wǒ   ZHÙ   ZÀI   BĚIJĪNG -de shíhou,*
        I   live at   Beijing -when
        tā   yě   bù   gēn wǒ   zhù   zài yīqǐ.
        (s)he YE   not   with I   live together
        '(S)he even didn't live together with me when I LIVED IN BEI-
        JING.'

     b. *Nǐ   BÙ   shuō, wǒ   yě   zhīdao.*
        you   not   say   I   YE   know
        'I even know it if you DON'T say it.' (XHDC: 945)

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23 Alleton's (1972) *yě 1* (value I).

(61a) is a case in which a subordinate temporal clause is in focus, whereas in (61b) only the negation marker is in focus.

Type 2: The focus is a constituent of the clause in which *yě* is used.

(62) *Lián GUÓWÁNG yě huì lái.*
even king YE will come
'Even THE KING will come.'

(63) *Lǎolǐ lián XĪNGQĪTIĀN yě bù xiūxi.*
Old Li even Sunday YE not rest
'Old Li doesn't even rest on SUNDAYS.'

B. (Optional) Functional elements preceding the focus

The functional elements that may precede *yě*-foci include the ones that may be used preceding parametric *dōu*. However, some other elements are restricted to occurring before *yě*-foci, or at least they strongly favour them. As with the functional elements preceding *dōu*-foci, they may usually be left out if the context is sufficiently specific. Note that all sentences in (64) and (65) have two readings if *lián* 'even', or the other focus markers are not used: Emphatic stress on the foci will yield the *even*-readings, otherwise, we get *also*-readings. In the case of (64a) the latter reading has been added in parentheses, and this kind of reading will be discussed, and its separate treatment justified, in section 0.

(64) a. *(Lián) NǓWÁNG yě huì lái.*
even queen YE will come
'Even THE QUEEN will come.' (cf. (50a))
('THE QUEEN will come, too.')

b. *Dìdi (lián) BĪNGQÍLÍN yě bù xiǎng chī.*
younger.brother even ice-cream YE not want eat
'The little brother doesn't even want to eat ICE-CREAM.'
(cf. (50b))

c. *Lǎolǐ (lián) XĪNGQĪTIĀN yě bù xiūxi.*
Old Li even Sunday YE not rest
'Old Li doesn't even rest on SUNDAYS.'

d. *(Lián) GĀOSHĀNDÌ-SHANG-de shuǐ yě bù gānjìng.*
even high.mountains-on-ATTR water YE not clean
'Even in THE HIGH MOUNTAINS the water is not clean any-more.' (cf. (50d))

These sentences show the interaction of *yě* with subject foci, object foci and circumstantial foci, respectively. For a survey of more functional elements that may precede *yě*-foci, turn to (65).

(65) a. *(Nǎpà shì) LĀOBǍN wǒ yě bù xiǎng jiàn.*
even.if be boss I YE not like see
'I even don't want to see THE BOSS.'

b. *(Jiù lián) DÀ XUĚ yě bù néng liú-zhù wǒ.*
even big snow YE not can stay-stop I
'Even HEAVY SNOW cannot stop me.'

c. *Nǐ (jiùshì) YUÀNYI xīshēng nǐ-de shíjiān,*
you even.if willing sacrifice you-ATTR time
wǒ yě bù néng jiēshòu.
I YE not can accept
'Even if you WANT to sacrifice your time, I can't accept it.'

d. *(Suīrán) MÉI XIÀ YŬ, tā yě dài-zhe sǎn.*
although not.have fall rain (s)he YE take-ASP umbrella
'(S)he took along an umbrella although IT WASN'T RAINING.'
(hx: 619)

e. *(Jíshǐ) XIÀ YŬ, tā yě yào duànliàn.*
even.if fall rain (s)he YE will exercise
'(S)he will work out even if IT'S RAINING.' (hx: 619)

(65a/b) conform to (51a/b) with parametric *dōu*; in (65c/d) the use of *dōu* instead of *yě* is dispreferred or impossible if *jiùshì* and *suīrán* are used.

C. Negative polarity items in focus

Just like parametric *dōu*, *yě* may interact with negative polarity items in focus, i.e. with specialized expressions which, in the particular meaning relevant here, only occur in negated and some other contexts. This is illustrated in (66) (cf. (52)).

(66) a. *Lǎo Lǐ lián YÍ-JÙ HUÀ yě shuōbuchūlai.*
Old Li even 1-CL:speech.unit speech YE not.be.able.to.speak
'Old Li couldn't even say A WORD.'

b. *Wǒ yáchǐ YĪ-DIǍNR yě bù tòng.*
I tooth 1-CL:a.bit YE not hurt
'My tooth doesn't hurt THE SLIGHTEST BIT/AT ALL.'

c. *Nǐ méi yǒu shàng chuán,*
you not have go.up boat
lián chuán-de YǏNGZI yě méi kàndào.
even boat-ATTR shadow YE not.have see
'You've never been aboard, you haven't even seen THE SHADOW of the boat yet.' (ad. rp: 52)

    d. *Jiù   shèhuì-de   kǔ,*
       old   society-ATTR hardship
       wǒ   YǑNGYUǍN yě   bù   huì   wàngjì.
       I   ever   YE   not   will   forget
       'NEVER EVER will I forget the sufferings in the old society.'
       (XHDC: 945)

The foci in (66a-c) denote (contextually determined) minimal quantities or entities; the focus in (66d) is interpreted like English *ever*.

D. Verbal elements in focus

Parametric *yě* resembles *dōu* also in this respect: Verbal elements in focus may interact with *yě*. They occur only in pre-*yě* position, an unstressed copy of the verb must follow *yě*, and the predicate must be negated. Semantically, we are dealing with verbal negative polarity items. Examples that are analogous to the ones given for verbal elements interacting with *dōu* (cf. (53)) are listed under (67).

(67) a. *Lǎo Sōng DÒNG yě   bu   dòng.*
         Old Song move   YE   not   move
         'Old Song doesn't even MOVE.'
     b. *Tā   CHŪ   Qì   yě   chūbushànglai.*
         (s)he go.out breath YE   not.manage.to.breathe
         'He didn't even manage to BREATHE.' (ad. Alleton 1972: 80)

The comments that were made with regard to the examples in (53) carry over to these sentences.

E. Parametric *yě* relates back to a wh-word/indefinite pronominal, or to a disjunction[24]

Type 1: Parametric *yě* relates back to a *wh*-word/indefinite pronominal.

(68) a. *SHÉI yě   bù   huì   guài   nǐ.*
         who YE   not   will   blame   you
         'NO-ONE will blame you.' (ad. rp: 7)
     b. *Tā SHÉNME yě   bù   shuō.*
         (s)he what   YE   not   say
         '(S)he doesn't say ANYTHING AT ALL.' (ad. Alleton 1972: 66)
     c. *Lǎo Zhāng SHÉNME SHÍHOU yě   méi   yǒu   gōngfu.*
         Old Zhang when   YE   not   have   time
         'Old Zhang NEVER EVER has time.'

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[24] The last paragraph of footnote 19 also applies to parametric *yě*.

    d. *Nèi-xiē   p

íxié, NĚI-SHUĀNG yě   bù   héshì.*
       that-CL:some shoe which-CL:pair YE   not   fit
       'Among these shoes, there's NO PAIR AT ALL that fits.'
    e. *Xiǎo sōngshǔ pá-de   hěn   kuài,*
       little squirrel climb-CSC very   fast
       yīshi   ZĚNME yě   dǎibuzhù.
       momentarily how   YE   not.be.able.to.catch
       'The little squirrel was climbing very fast, and for the time being there was NO WAY AT ALL to catch it.' (hx: 620)

(68a) and (68d) illustrate *wh*-words/indefinite pronominals in subject function that interact with *yě*, in (68b) the preposed object nominal is in focus. In (68c) and (68e) adverbial expressions are in focus. There is no direct translational match among the foci of the Mandarin sentences and those of the English translations.

Type 2: Parametric *yě* relates back to a disjunction.

(69) a. *Tā   bùguǎn xià bu   xià   yǔ   yě   huì   lái.*
         (s)he no.matter fall not   fall   rain   YE   will   come
         '(S)he'll come no matter whether it rains or not.'
         (ad. Eifring 1995: 32)
     b. *Bùguǎn   chéng yǔ   bù   chéng,*
         no.matter   succed and   not   succeed
         nǐ   yě   yào   gěi   wǒ-ge   huíhuà.
         you   YE   must   give   I-CL   reply
         'No matter whether you're successful or not, you must give me a reply.' (hx: 618)

Parametric *yě* may, just like parametric *dōu*, be preceded by question-like disjunctions. The information-structural facts have been neglected in the examples in (69) because they are not evident and will not be discussed until we get to section 4.3.4.

2.4.2 The emphatic use type of *yě*[25]

The emphatic use type of *yě* is usually characterized as having a toning-down force in cases of tactful criticism directed to the addressee; in other cases it expresses resignation, or the fact that the speaker accepts the things the way they are. The first two examples in (70) illustrate the for-

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[25] Alleton's *yě* 3/value III.

mer option, the third and fourth sentences are instances of the latter utterance type. (The relevant token of *yě* in (70a) has been underlined.)

(70) a. *Yě*   *bù*   *néng quán yuàn tā,*
          YE   not   can   all   blame (s)he
          yàoshi wǒ yě gēnzhe qù yīngxǔ   jiù bú zhìyú zhèyàng le.
          if   I   YE follow   go perhaps   JIU not get.to this.way PRT
          'But you cannot put all the blame on him/her, if I had come
          along things might not have come to this point.' (hx: 620)

      b. *Nǐ*   *yě*   *tài*   *xiǎokàn*   *rén*   *le,*
          you   YE   too   underestimate   person   PRT
          tā   *kěshì*   *kēbān chū shēn.*
          (s)he but   professionally.trained
          'In a way your opinion of him/her is too negative, after all
          (s)he has received professional training.' (hx: 620)

      c. *Fǎnzheng wǒmen   yě méi yǒu   duōshao   qián   cún.*
          anyway   we   YE not have all.that.much   money   save
          'It's just the way that we don't have all that much money to
          save anyway.' (rp: 27)

      d. *Niánjì*   *yě*   *bù*   *xiǎo*   *le.*
          age   YE   not   small   PRT
          'It's simply the way that (s)he's not very young anymore.'
          (Alleton 1972: 83)

2.4.3   The focusing use type of *yě*[26]

Just as in the English sentence *Peter will also be there*, focusing *yě* may relate to a preceding or a following focus or C-topic. This is reminiscent of parametric *cái*, but there are several reasons justifying the differing treatment of *yě*.

   First, the use of focusing *yě* is never obligatory (though its non-use may lead to infelicity), while the use of parametric *yě* is obligatory in the presence of a preceding focus marker. (In section 3.5 we will have the opportunity to see that actually all occurrences of parametric particles are mandatory.) Second, there is evidence to the effect that focusing *yě* has all those properties that have been studied in great detail for adverbial uses of *also* or German *auch* (cf. Krifka 1998 or Reis & Rosengren 1997): If *yě* is stressed, it is always preceded by a C-topic related to it; if it is unstressed, it is always followed by an interacting focus. Parametric

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[26] Alleton's *yě* *I*/value I.

yě, on the other hand, is always unstressed, and it is always preceded by its interacting focus. Put briefly, focusing *yě* behaves precisely like other adverbial additive focus particles, while parametric *yě* behaves differently. Language-internally, the criteria of obligatoriness and lack of accent serve to establish parametric *yě* as a natural class distinct from focusing *yě*.

Type 1: Focusing *yě* precedes its interacting focus.

(71) a. *Nǐ*   *yīnggāi*   *chī-diǎn*   *qīng-cài,*
          you   should   eat-CL:a.bit   green-vegetable
          yě   *yīnggāi*   *chī-diǎn*   NIÚRÒU.
          YE   should   eat-CL:a.bit   beef
          'You should eat some of the green vegetables, and you should
          also eat a little BEEF.

      b. *Māma*   *ài*   *wǒmen,*   *yě*   PÍPÍNG   *wǒmen.*
          mum   love   we   YE   criticize   we
          'Mum loves us, and she also CRITICIZES us.' (hx: 617)

      c. *Máoyī*   *xǐ-gānjìng-le,*   *yě*   *xǐ-XIǍO-le.*
          jumper   wash-clean-ASP   YE   wash-small-ASP
          'The jumper got clean as a result of washing it, and it also got
          SMALLER.' (hx: 617)

      d. *Tā*   *chōu yān,*   *yě*   HĒ   JIǓ.
          (s)he draw smoke   YE   drink alcohol
          '(S)he smokes, and (s)he DRINKS, too.'

A diverse collection of elements following *yě* may be in focus: The direct object as in (71a), the verb as in (71b), the resultative verbal element as in (71c), or the whole VP as in (71d) illustrate this variety.

Type 2: Focusing *yě* follows its interacting C-topic; *yě* is stressed.

(72) a. *Tā*   *zuótiān*   *qù*   *kàn*   *yá*   *le,*
          (s)he yesterday   go   see   tooth   PRT
          [*WǑ*]C-topic   *zuótiān*   *yě*   *qù*   *kàn*   *yá*   *le.*
          I   yesterday   YE   go   see   tooth   PRT
          '(S)he went to the dentist yesterday, and [I]C-topic also went to
          the dentist yesterday.' (hx: 616)

      b. *Tā*   *jīntiān bù zài,*   [*MÍNGTIĀN*]C-topic *yě*   *bù*   *zài.*
          (s)he today   not be.here tomorrow   YE   not   be.here
          '(S)he's not here today, and she will not be here [TOMOR-
          ROW]C-topic, either.' (hx: 617)

In (72a) the subject is the C-topic; in (72b) the time adverbial fulfills the same function.

2.4.4   *Other use types of* yě

Besides the use types introduced in sections 2.4.1 and 2.4.2, there are clause-final uses of *yě* that are clearly unrelated to the former ones. *Yě* in this position is usually literary and archaic (cf. (73)), but it also appears to occur in the spoken language (cf. (74)).

(73)   *Chén Shèng   zhě,   Yángchéng-rén   yě.*
      Chen Sheng   PRT   Yangcheng-person YE
      'Chen Sheng is from Yangcheng.' (XHDC: 945)

(74)   *Héqí dú   yě!*
      how malicious   YE
      'How mean!' (XHDC: 945)

2.5   PARAMETRIC *CÁI, JIÙ, DŌU* AND *YĚ* AS INDEPENDENT LINGUISTIC SIGNS

In general, the 'one form – one meaning postulate' of structural linguistics can be shown to be a persistent guideline for large portions of the research devoted to the present object of study (e.g. Paris 1981, Biq 1984, 1988, or Lai 1995, 1996, 1999; less so Alleton 1972). That is to say, Paris, Biq and Lai regard all use types of *cái* and *jiù* – their studies do not investigate other elements – as ultimately related to a single core meaning (a 'Gesamtbedeutung' in the sense of Jakobson 1936). This leaves no room for homonymy, and vagueness and polysemy have the field all to themselves. I think this position cannot be maintained. Instead I want to defend the opinion that the parametric uses of each of the elements under scrutiny must be recognized as synchronically independent linguistic signs. Since later chapters will not deal with the other use types – except for the modal one which is really a sub-type of the parametric use type –, I will not make any effort to show the same for the other use types.

It is decidedly more difficult to discuss matters of homonymy, polysemy, vagueness and ambiguity in the realm of function words than it is when dealing with content words, since standard diagnostics of these relations often do not apply straightforwardly. What is more, there is so much disagreement about the theoretical status of the aforementioned relationships among linguistic items which have the same *signifiant* that any discussion of these relationships will be subject to criticisms specific to different traditions of linguistic research. Therefore, I want to follow a

somewhat unorthodox way of argumentation to establish the linguistic sign status of parametrically used *cái, jiù, dōu* and *yě*.

My line of argumentation rests on two concepts: Obligatoriness and paradigmaticity. These notions play an important role in those branches of grammaticalization theory that are, in one way or another, derivative of or compatible with Lehmann's seminal paper (Lehmann 1982 [1995]).

Obligatoriness, or transparadigmatic variability, is that paradigmatic parameter of grammaticalization which captures the degree of freedom with which speakers of a language may choose to express a certain category, with the term 'category' taken here to comprise a whole grammatical dimension which is expressed by a paradigm of linguistic signs. Thus, to take a standard example, while aspect is not an obligatory category in German, it is highly grammaticalized in Russian and other Slavonic languages.

Paradigmaticity or paradigmatic cohesion is the degree to which a paradigm forms a coherent formal and semantic unit. A paradigm of small size with members that are maximally similar in formal behaviour and maximally systematic and exhaustive with respect to their function is highly grammaticalized.

Now, what does all of this have to do with justifying the independent status and treatment of the parametric use type as opposed to the other use types? If we assume that grammaticalization yields linguistic signs of some kind, and if we can show that the parametric use type constitutes a sub-system of Mandarin grammar with grammaticalization properties that are different from those of the other use types, we have also shown that parametric *cái, jiù, dōu* and *yě* are linguistic signs which can and should be treated independently in a synchronic grammar of Mandarin. In the rest of this section I want to show that this is in fact the case.

A. *Obligatoriness:*

In the parametric use *cái, jiù, dōu* and *yě* must, in the presence of preceding focus markers, be used to preserve grammaticality, while this is not the case with the other use types.[27]

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[27] In section 3.5 I will argue that in fact all occurrences of parametric particles are obligatory. The above generalization is not true of the distributive use of *dōu* (cf. 0). In many cases distributive *dōu* is necessary to ensure grammaticality (cf. Lin 1996, 1998, Zhang 1997). Admittedly, this makes the argument less striking, but this state of affairs does not constitute counter-evidence: Parametric *dōu* and distributive *dōu* are just two elements that have been grammaticalized independently. See section 4.3.1, Sybesma (1996) and Zhang (1997: 261ff) for irrefutable arguments to set apart parametric *dōu* from distributive *dōu*.

Parametric use

(75) *Zhǐyǒu   XĪNGQĪTIĀN   Lǎo Wáng   *(cái)   gōngzuò.*
     only   Sunday   Old Wang   CAI   work
     'Old Wang works only on SUNDAYS.'

(76) *Zhǐyào   NǏ   LÁI,   wǒ   *(jiù)   huì   qù.*
     if   you   come   I   JIU   will   go
     'If YOU COME I will go.'

(77) *Lián   XIǍO WÁNG   *(dōu)   yào   lái.*
     even   Little Wang   DOU   want   come
     'Even LITTLE WANG wants to come.'

(78) *Tā   jíshǐ   XIÀ   YǓ   *(yě)   huì   lái.*
     (s)he even.if   fall   rain   YE   will   come
     '(S)he will come even if IT RAINS.' (Eifring 1995: 32)

In all of the above examples, dropping *cái, jiù, dōu* or *yě*, respectively, renders the sentences ungrammatical. Such a situation does not arise with the other use types. The examples in (79) through (83) illustrate this.

Aspectual use

(79) *Lǎo Wáng   (cái/jiù)   lái.*
     Old Wang   CAI/JIU   come
     'Old Wang has (only just) come/will come (immediately).'

Emphatic use

(80) *Wǒ   (cái/jiù)   bù   pà!*
     I   CAI/JIU   not   fear
     'How can you think I might be afraid of that?!'/
     'I'm (simply) not afraid of that!'

(81) *Míngtiān   zhè-huìr   wǒ   (dōu) zài   Shànghǎi   le.*
     tomorrow   this-CL:moment   I   DOU at   Shanghai   PRT
     'Tomorrow by this time, I'll (already) be in Shanghai.' (hx: 166)

(82) *Niánjì   (yě)   bù   xiǎo   le.*   (Alleton 1972: 83)
     age   YE   not   small   PRT
     'It's simply the way that (s)he's not very young anymore.'

Focusing use

(83) *Lǎo Sōng   (jiù)   kàn-wán-le   dì-yī-zhāng   le.*
     Old Song   JIU   read-finish-ASP   ORD-1-CL:chapter   PRT
     'Old Song has (only) read the first chapter so far.'

B. Paradigmaticity

Parametric *cái, jiù, dōu* and *yě* constitute the maximally systematic core of a semantically coherent paradigm:

(i)   parametric *cái*: marker indicating negated existential quantification over alternatives

(ii) parametric *jiù*: marker indicating negated universal quantification over alternatives

(iii) parametric *dōu*: marker indicating universal quantification over alternatives

(iv) parametric *yě*: marker indicating existential quantification over alternatives.

The quantificational types that form part of the above characterizations are the four classical logically possible types that may be derived from the interaction of inner and outer negation with either existential or universal quantification; in our case quantification ranges over domains of alternatives. All of this is discussed and justified in great detail in ch. 4.[28]

2.6   OVERVIEW OF CLASSIFICATIONS

The following tables are to a large extent self-explanatory. They contrast the division of the relevant empirical domain as I have chosen to present it with the classifications of other major proposals. The similarity of my choices with those of Alleton (1972) and Biq (1984, 1988) is obvious. Lai's (1999) classifications are in sharp contrast to Alleton's, Biq's or my way of sub-dividing the empirical domain.

Table 2.1 Cái's *different use types in this and in other studies*

	this study	Alleton	Biq	Lai
focus follows *cái*	parametric (2.1.1)	value II *cái 2*	limiting	restrictive
focus precedes *cái*		value II *cái 1*	parametric	conditional
	modal (2.1.2)			
				temporal
'immediate past'	aspectual (2.1.3)	value I *cái 3*	temporal	
'refutation'	emphatic (2.1.4)	value III *cái 4*	emphatic	emphatic

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[28] The justification of this point would presuppose large portions of the discussions in later chapters. For this reason, I will only give an informal list of properties here that should give the reader an idea of the general nature of the system. Note that the necessity to refer to the results of later chapters to justify the delimitation of my object of study is not a methodological problem, but rather arises from problems of exposition.

Table 2.2 Jiù's different use types in this and in other studies

	this study	Alleton	Biq	Lai
focus or C-topic precedes *jiù*	parametric (2.2.1)	value II *jiù 1*	Parametric	restrictive
				conditional
	modal (2.2.2)			
				temporal
'immediate future'	aspectual (2.2.3)	value I *jiù 3*	Temporal	
'simply'	emphatic (2.2.4)	value III *jiù 2*	Emphatic	emphatic
'only'; foc. follows *jiù*	focusing (2.2.5)		Limiting	restrictive
	other uses (2.2.6)	[not treated]	other uses	[not treated]

Table 2.3 Dōu's different use types in this and in other studies

	this study	Alleton	Lin	Zhang	Huang
focus precedes *dōu*	parametric (2.3.1)	value II *dōu 2*	[not treated]	focus marker	sum operator on the event variable
			distributive	quantificational	
'all'/'each'	distributive (∅)	value I *dōu 1*			
'already'	emphatic (2.3.3)	value III *dōu 3*	[not treated]	[not treated]	[not treated]

Table 2.4 Yě's different use types in this and in Alleton's study

	this study	Alleton
focus or C-topic precedes *yě*	parametric (2.4.1)	value II *Yě 2*
'anyway', 'in a way'	emphatic (2.4.2)	value I *yě I*
'also'	focusing (2.4.3)	value III *yě 3*

3   TRIGGERS AND CONSTRAINTS
WHERE PARAMETRIC *CÁI, JIÙ, DŌU* AND *YĚ* MUST (NOT) BE USED

In this chapter I investigate the conditions that render the use of parametric *cái, jiù, dōu* and *yě* obligatory or impossible as long as we keep the semantic nature of the foci involved constant and appropriate. (See ch. 4 for discussion of the relevant focus-semantic aspects.) By and large, we will be dealing with facts of relative position and movement. The relative position of *cái, jiù, dōu* and *yě* with regard to interacting foci is important because it is, with only few exceptions in *cái*-sentences, impossible for a focus interacting with a parametric word to follow that word. Movement of canonically post-verbal elements may ensure the required relative position of foci and parametric words in single cases, and therefore, some movement facts are discussed.

The broad perspective of this chapter may leave the theoretical linguist frustrated at some points, because it is impossible not to cut down on theoretical explicitness and explanatory strength if one wants to mention all the relevant phenomena in a study of this limited size. From another perspective the design of this chapter is, however, fully justified: The endeavour to state factors which trigger or obstruct the use of parametric words has uncovered quite a few descriptive generalizations that seem to have gone unnoticed so far. I think this is a desirable result in itself.

While I devote separate sections to *cái* and *jiù*, I treat *dōu* and *yě* in a single section. This is useful because in the case of *dōu* and *yě* the relevant generalizations overlap to a considerable degree, and the differences can best be appreciated if the distributions of both elements are discussed side by side.

Section 3.4 constitutes the theoretical harvest that may be gathered from the descriptive generalizations stated in sections 3.1 through 3.3. In that section I will discuss which category parametric *cái, jiù, dōu* and *yě* should be assigned to, and what constitutes the general function of these words. The claim will be that *cái, jiù, dōu* and *yě* are particles with a grammatical function: They mark an agreement relation among specific information-structural categories and backgrounds.

The insights of the present chapter will, in section 3.5, allow us state more clearly than in ch. 2 that foci following *cái* and foci following *yě* are not to be treated on a par: Foci interacting with and following *cái* interact with parametric *cái*, while foci following *yě* interact with focusing *yě*.

3.1 TRIGGERS AND CONSTRAINTS: PARAMETRIC *CÁI*

3.1.1 *Where parametric* cái *must be used*

In order to see what configurations make the use of *cái* nessecary, let us first review some relevant cases in which *cái* must be used, and then turn to some cases where it need not be used.

(1) a. *Zhǐyǒu ZHÈ-zhǒng shū Lǎo Wáng *(cái) mǎi-guo.*
         only   this-CL:kind book Old Wang   CAI   buy-ASP
         'Old Wang has bought only THIS kind of book before.'

     b. *Zhǐyǒu zài ZHÈ-ge dìfang wǒmen *(cái) néng wánr.*
         only   at this-CL place   we   CAI can play
         'We can have fun only at THIS place.'

     c. *Chúfēi NǏ LÁI, wǒ *(cái)   qù.*
         only.if you come I   CAI   go
         'Only if YOU COME will I go.'

In (1a) part of the object is overtly marked as an *only*-focus, i.e. the proposition expressed by the sentence is not true of any kind of book which may not be subsumed under the class *zhè-zhǒng shū* 'this kind of book'. (1b) and (1c) have (parts of) adverbials in focus, a locative phrase in (1b), and a conditional clause in (1c). In all of these cases it is ungrammatical not to use *cái*. Now consider the examples in (2).

(2) a. *ZHÈ-zhǒng   shū Lǎo Wáng (cái) mǎi-guo.*
         this-CL:kind book Old Wang CAI buy-ASP
         'Old Wang has bought (only) THIS kind of book before.'

     b. *Zài ZHÈ-ge dìfang wǒmen (cái) néng wánr.*
         at   this-CL place   we   CAI can play
         'We can have fun (only) at THIS place.'

     c. *NǏ LÁI, wǒ (cái) qù.*
         you come I   CAI go
         '(Only if YOU COME will I go)./You come, I go.'

These examples are identical to the ones in (1), except that *zhǐyǒu* 'only' and *chúfēi* 'only if' have been dropped. If *cái* is used, each sentence is interpreted as if the dropped element were there, if *cái* is not used, simple

focusing is expressed. ((2c) is slightly different; in this case dropping *cái* leaves the first clause unembedded, thereby yielding a paratactic structure open to a large variety of readings.) Comparing (1) and (2) we might want to state the generalization that *cái* is obligatory in all those cases in which a focus that is overtly marked as an *only*-focus occurs in a clause.

For two reasons, this is not the whole story. The first reason concerns the overt marking of *only*-foci. Another way of generalizing over the data in (1) and (2) is to say that in each case in which the reading of a focus is restricted to an *only*-reading the use of *cái* is obligatory. (1) and (2) just instantiate two different ways of restricting focus readings: In (1) the foci are lexically marked by a focus operator; in those versions of (2) in which *cái* is used the foci are restricted contextually.[1] According to this view, *cái* in (2) is, in those cases in which it is used, just as obligatory as in (1). This seems to me to be the better generalization, simply because it allows us to treat *cái* alike in both sets of examples.

The second reason why our first generalization is not quite exact is illustrated by the examples in (3).

(3) a. *Zhè-jiàn dàyī (cái/zhǐ) yào WǓSHÍ-KUÀI   qián.*
         this-CL coat CAI/only cost 50-CL:MU   money
         'This coat is (only) FIFTY KUAI.'

     b. *Lǎo Wáng zài Běijīng (cái/zhǐ) zhù-le YĪ-NIÁN.*
         Old Wang at   Beijing CAI/only live-ASP 1-CL:year
         'Old Wang lived in Beijing for (only) A YEAR.'

In these cases we are dealing with a direct object of a stative verb and with a duration complement (parts of which are) in focus. Here, the use of *cái* is not only "optional" the way it was in (2); moreover, *cái* may just as well be replaced by *zhǐ* 'only', an option that is not given in (1) or (2). What, then, is the difference between the first two sets of sentences on the one hand, and the last set on the other? It is relative position that matters: Whenever an *only*-focus precedes the verb, *cái* must be used. If the *only*-focus follows the verb, or if the verb itself is in focus, *zhǐ* 'only' may be used. (We will see later that the facts concerning *cái* with postverbal foci are actually more intricate than that.) We may thus state the generalization in (4).

(4) Obligatory *cái*:
     Parametric *cái* is used if an *only*-focus precedes the structural position of *cái*.

---

[1] Some readers might, alternatively, like to assume phonetically empty focus operators in those versions of (2) in which *cái* is used.

(4) makes reference to *cái*'s structural position instead of referring to the position of the focus wrt. ɬo the verb. This is done because an immediately preverbal position need not always be a pre-*cái* position, cf. (5).

(5) *Zhǐyǒu XĪNGQĪTIĀN wǒ   cái   gēn péngyoumen jiàn miàn.*
     only Sunday   I   CAI with friends   see face
     'I meet my friends only on SUNDAYS.'

Shyu (1995) has identified the position of parametric *dōu* with a head position immediately above the Asp/M-phrase, i.e. an aspect phrase, a non-epistemic modal phrase, or a negation marker, and I will apply this analysis to the case of parametric *cái* (I will return to Shyu's account in section 3.1.2.A). In less theory-dependent terms we might say that *cái* is the leftmost element within the larger verbal complex of a clause.

   (4) will correctly cover practically all occurrences of preverbal *only*-foci. However, there is a marginal class of examples challenging (4). Examples of this kind involve subject-foci and certain adverbial foci in a position immediately preceding the structural position of *cái*. In these cases the use of *cái* is optional even if the foci are overtly marked by *zhǐyǒu* 'only'.

(6) a. *Lǎo Wáng zhǐyǒu XĪNGQĪTIĀN (cái) gōngzuò.*
         Old Wang only   Sunday   CAI   work
         'Old Wang works only on SUNDAYS.'
     b. *Zhǐyǒu TĀ   (cái) néng bāngzhù wǒ.*
         only   (s)he CAI   can   help   I
         'Only (S)HE can help me.' (hx: 755)

Such examples are challenging because in all the examples we have considered so far, the overt marking of an *only*-focus in positions preceding *cái* coincided with the obligatory use of *cái*, and from a statistical point of view, theses cases by far outnumber examples as in (6). In theoretical linguistics, Zhang (1997) was the first one to notice the optionality of *cái* in configurations like (6a), but neither she nor anybody else among the syntacticians who have dealt with *cái* seems to have proposed a solution to this problem. I will leave (4) as it is, but the reader should keep in mind that it cannot cover the optional use of *cái* in (6).

3.1.2 *Factors constraining the use of parametric* cái

The use of *cái* may be constrained by

(i)   movement facts concerning different types of nominals with a canonically post-verbal position;

(ii) interaction with quantifiers.

To get a first impression of the grammaticality patterns relevant in this section, examples of each type of acceptability failure, and good contrasting sentences, are given in (7) and (8).

(7) a. *Lǎo Wáng   (*cái)   mǎi-le   ZHÈ-běn shū.*
         Old Wang   CAI   buy-ASP   this-CL book
         intended: 'Old Wang has bought only THIS book.'
     b. *Lǎo Wáng   ZHÈ-běn shū cái   mǎi-le.*
         Old Wang   this-CL book CAI   buy-ASP
         'Old Wang has bought only THIS book.'
     c. *Lǎo Wáng   cái   mǎi-le   SĀN-BĚN SHŪ.*
         Old Wang   CAI   buy-ASP 3-CL   book
         'Old Wang has bought only THREE BOOKS.'

(8) a. *Wǒ (*cái)   néng   hē   YĪ-BĒI   jiǔ.*
         I   CAI   can   drink   1-CL:cup wine
         intended: 'I can (only) drink ONE GLASS of wine.'
     b. **Měi-ge rén   chúfēi   NǏ   LÁI   dōu cái   qù.*
         every-CL person only.if you   come each CAI   go
         intended: 'Everybody only goes if YOU COME.'

In (7a) a post-verbal direct object with a demonstrative in focus does not allow the use of *cái*. The same nominal in a pre-verbal position is good in (7b). It is likewise grammatical to have an indefinite nominal focus in post-verbal position as in (7c). The use of the modal verb in (8a), and the wrong relative position of the *cái*-focus relative to the marker of distributive quantification in (8b) render the last two examples ungrammatical. Let us now look at the constraining factors in more detail.

A. Movement of nominals and (un)grammatical cái

The discussion of the first constraining factor is often subsumed under the heading 'object shift' (cf. e.g. Zhang N. 2000). What we are dealing with is the fact that movement is often obligatory in the presence of *cái*. It affects nominals whose canonical position is post-verbal. At the same time the interpretation of the nominals must not be too indefinite (in the sense of the definiteness hierarchy (Silverstein 1976, Croft 1990)) or too deficient (in the sense of Ross 1995) to move to a position in front of the verb and *cái*. The relevant data are as follows:

   (i) Proper names, pro-forms, definite descriptions and bare nouns in habitual sentences must move from a post-verbal base position to the left of *cái* if they constitute the focus with which *cái* interacts, or if the focus

with which *cái* interacts forms part of them.[2] This is illustrated in (9) for the first three categories.

(9) a. *Lǎo Wáng (zhǐyǒu) MĚIGUÓ/NÀR/NÈI-GE DÌFĀNG*
     Old Wang only USA/there/that-CL place
     cái xiǎng qù.
     CAI want go
     'Old Wang only wants to go TO THE USA/THERE/TO THAT PLACE.'

   b. **Lǎo Wáng cái xiǎng qù MĚIGUÓ/NÀR/NÈI-GE DÌFĀNG.*
      Old Wang CAI want go USA/there/that-CL place
      intended: 'Old Wang only wants to go TO THE USA/THERE/TO THAT PLACE.'

Note that if *cái* is not used, object shift is optional, i.e. not syntacticized in a way which would leave the speaker no choice.

(10) a. *Lǎo Wáng MĚIGUÓ/NÀR/NÈI-GE DÌFĀNG xiǎng qù.*
      Old Wang USA/there/that-CL place want go
      'Old Wang wants to go TO THE USA/THERE/TO THAT PLACE.'

    b. *Lǎo Wáng xiǎng qù MĚIGUÓ/NÀR/NÈI-GE DÌFĀNG.*
       Old Wang want go USA/there/that-CL place
       'Old Wang wants to go TO THE USA/THERE/TO THAT PLACE.'

Bare nouns with a post-verbal base position in habitual sentences behave alike. This contrasts sharply with the respective facts for bare nouns in episodic sentences; compare (11) and (12).[3]

(11) a. **Lǎo Lǐ cái mǎi FÁNGZI.*
      Old Li CAI buy house
      intended: 'Old Li buys only HOUSES (habitually).'

    b. *Lǎo Lǐ (zhǐyǒu) FÁNGZI cái mǎi.*
       Old Li only house CAI buy
       'Old Li buys only HOUSES (habitually).'

(12) a. *Lǎo Lǐ cái mǎi-le FÁNGZI.*
      Old Li CAI buy-ASP house
      'Old Li bought only A HOUSE.'/
      'Old Li did only the HOUSE-buying.'

---

   b. **Lǎo Lǐ (zhǐyǒu) FÁNGZI cái mǎi-le.*
      Old Li only house CAI buy-ASP
      intended: 'Old Li bought only A HOUSE.'/
      'Old Li did only the HOUSE-buying.'

Although the focused object nominals do not differ overtly with respect to their syntactic structure in (11) and (12), the movement facts co-vary with the different sentence readings: Bare nouns in habitual sentences pattern with proper names, pronouns and definite descriptions; bare object nouns in episodic sentences pattern with the class of nominals to which we now turn.

(ii) Bare object nouns in episodic sentences, numerically quantified direct or indirect object nominals, verbal measures, frequency phrases, duration phrases, excess measure phrases in comparative constructions, numerically quantified nominal predicates, predicates in copula sentences, and possibly some further similar constituents, must not move to any position in front of the verb, no matter whether *cái* is used or not.[4]

(13) Bare non-generic object nouns:
     (cf. (12))

(14) Numerically quantified indefinite object nominals:
     a. *Lǎo Lǐ cái mǎi-le SĀN-BĚN SHŪ.*
        Old Li CAI buy-ASP 3-CL book
        'Old Li bought only THREE BOOKS.'

     b. **Lǎo Lǐ (zhǐyǒu) SĀN-BĚN SHŪ (cái) mǎi-le.*
        Old Li only 3-CL book CAI buy-ASP
        intended: 'Old Li bought (only) THREE BOOKS.'

(15) Verbal measures:
     a. *Lǎo Lǐ cái tī-le wǒ LIǍNG-jiǎo.*
        Old Li CAI kick I 2-CL:foot
        'Old Li kicked me only TWICE.'

     b. **Lǎo Lǐ (zhǐyǒu) LIǍNG-jiǎo (cái) tī-le wǒ.*
        Old Li only 2-CL:foot CAI kick-ASP I
        intended: 'Old Li kicked me (only) TWICE.'

---

[2] Thus, what moves is often not just the focus, but the minimal bigger constituent or syntactic island which may move (for a theoretical and cross-linguistic discussion of this focus-related pied-piping effect cf. Drubig 1994).

[3] Paris (1981: 329f) and Zhang (1997: 23) present similar data. Both mention the absence of the aspectual marker *-le* in such habitual sentences.

[4] Wang (1956) states that post-verbal *cái*-foci must be numerically quantified. This is true of all the immediately following examples, but the bare noun example (12a) is a counterexample. That almost all post-verbal *cái*-foci contain a number morpheme is due to the fact that measure phrases with a post-verbal base position usually cannot move to the left of *cái*. Therefore, Wang's constraint is purely epiphenomenal. Nonetheless, it is the predominant descriptive generalization in the literature when cases of post-verbal *cái*-foci are discussed (e.g. Alleton 1972: 135, 142, Paris 1981: 333 or Zhang 1997: 21). Biq (1984: 84) and Lai (1999: 643) explicitly refuse the general validity of Wang's generalization.

(16) Frequency phrases:
  a. *Lǎo Lǐ   cái   lái-le   YĪ-CÌ.*
     Old Li CAI come-ASP 1-CL:time
     'Old Li came only ONCE.'
  b. **Lǎo Lǐ (zhǐyǒu) YĪ-CÌ   (cái) lái-le.*
     Old Li only   1-CL:time CAI come-ASP
     intended: 'Old Li came (only) ONCE.'

(17) Duration phrases:
  a. *Lǎo Lǐ   zài   Běijīng cái   zhù-le   YĪ-NIÁN.*
     Old Li in   Beijing CAI live-ASP 1-CL:year
     'Old Li lived in Beijing for only A YEAR.'
  b. **Lǎo Lǐ (zhǐyǒu) YĪ-NIÁN   (cái) zhù-le   zài Běijīng.*[5]
     Old Li only   1-CL:year CAI live-ASP in Beijing
     intended: 'Old Li lived in Beijing for (only) A YEAR.

(18) Excess measure phrases in comparative constructions:
  a. *Lǎo Lǐ bǐ   Xiǎo Wáng cái   gāo-le   YĪ-LÍMǏ.*
     Old Li compared.with Little Wang CAI big-ASP 1-CL:cm
     'Old Li is only ONE CENTIMETRE taller than Little Wang.'
  b. **Lǎo Lǐ bǐ   Xiǎo Wáng (zhǐyǒu) YĪ-LÍMǏ*
     Old Li compared.with Little Wang only   1-CL:cm
     (cái) gāo-le.
     CAI big-ASP
     intended: 'Old Li is (only) ONE CENTIMETRE taller than
     Little Wang.'

(19) Numerically quantified nominal predicates (no copula, measure-
     word predicate nominal):
  a. *Xiǎo Wáng   cái   WǓ-SUÌ.*
     Little Wang CAI 5-CL:year.of.life
     'Little Wang is only FIVE YEARS old.'
  b. **Xiǎo Wáng (zhǐyǒu) WǓ-SUÌ   cái.*
     Little Wang only   5-CL:year.of.life CAI
     intended: 'Little Wang is only FIVE YEARS old.'

(20) Predicates in copula sentences:
  a. *Wǒ cái   shì yī-ge FÚWÙYUÁN.*
     I   CAI be   1-CL servant
     'I am only a SERVANT.'

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[5] The fact that the locative phrase is in the post-verbal position in this sentence, while it is in a preverbal one in the preceding sentence, is due to a constraint which requires either a locative or a measure phrase of some kind behind the verb *zhù* 'to dwell, to live (in some place)'. Thus, if (17b) is to get a fair chance, it must have a post-verbal constituent; this is why a less-than-minimal pair is given in (17).

  b. **Wǒ (zhǐyǒu) yī-ge FÚWÙYUÁN   (cái) shì.*
     I   only   1-CL servant   CAI be
     intended: 'I am (only) A SERVANT.'

These examples illustrate that canonically post-verbal nominal constituents which cannot move irrespective of *cái* may interact with *cái*. The unifying generalization for all these cases is that the focused nominals rank low on the definiteness hierarchy or high on a scale of nominal deficiency. The cut-off point is between nominals with definite interpretations, which may move in general and must move if they are to interact with *cái*, and nominals with indefinite or non-referential interpretations, which must not move. The bare nouns are a difficult case. Bare focused object nouns in habitual sentences must move in *cái*-sentences. They must not move in episodic sentences. The problem is that the property which distinguishes these two cases most straightforwardly – habituality – is a property of sentences, and not of nominals (in the terminology of Krifka et al. 1995: 15, example (11b) is a characterizing/habitual sentence with a specific non-kind-referring subject). I am not sure what to do about this awkward mixture of levels. One way out would be to introduce a whole new constraining dimension, namely genericity vs. non-genericity and to recategorize the bare noun cases accordingly. This would make the description a lot clumsier, though. Moreover, I do not know how to tie this new dimension to anything else that is relevant for the analysis of *cái*. Therefore, I will leave the descriptive situation as it is now. The descriptive generalization to cover the two sub-cases (i) and (ii) may then be stated as in (21).

(21) If a nominal with a canonically post-verbal base position can move to a pre-verbal position at all, it must do so if (part of) it is the focus interacting with *cái*. Whether a nominal may move away from the post-verbal position or not is a function of its referential status: Any nominal which gets interpreted as indefinite or less referential than indefinite on the definiteness hierarchy must not move.

Phrased negatively, we may state the following:

(22) Parametric *cái* must not be used if the focus *cái* is to interact with can in principle be moved, but has not moved away from its post-verbal base position to a position preceding *cái*. Conversely, sentences with *cái* are also ungrammatical if a nominal has been moved to a pre-verbal position from its post-verbal base position although it must not be moved because it is indefinite or less referential than indefinite.

The same facts are summarized in Table 3.1.

Table 3.1: (Visible) movement of canonically post-verbal nominals

interpretation of nominals	definite	indefinite/ generic	indefinite	non-referential
movement of post-verbal nominals irrespective of *cái*	possible		impossible	
movement of post-verbal nominals (partly) in focus in interaction with *cái*	obligatory			

The data we have looked at above are not easily accomodated within accounts subscribing to the Minimalist Program (Chomsky 1995). In general, movement is only a last resort option in this theory. Movement is triggered by the need to check a feature of some functional head. It can be checked if a checker, i.e. a constituent which is syntactically marked for the same feature as instantiated by the head, moves to the specifier position of the phrase which is headed by the functional head (every-day examples of feature checking are agreement phenomena within nominals or subject-verb agreement). Features that are still unchecked at the end of a derivation render a sentence ungrammatical. There are two kinds of features, weak ones and strong ones. Strong features must be checked overtly, i.e. the movement must be visible on the surface (theory-internally this amounts to 'movement before spell-out', with spell-out being the point in the derivation where a P(honological)F(orm)-branch and a L(ogical)F(orm)-branch split up the formerly non-branching derivation line). Weak features are checked covertly, i.e. at LF or in that part of the derivation on the way from spell-out to the interface between syntax and the interpretive/semantic component of grammar. This kind of movement cannot be seen directly because it happens after the PF branch of the derivation has received its input.

In the Chinese case we are dealing with here, the fact that foci interacting with *cái* usually appear to the left of *cái* (i.e. the foci may be argued to have passed through the specifier position of some functional phrase relevant for *cái*) has inspired two competing checking accounts. Shyu (1995) – who actually deals with parametric *dōu*, but the argument carries over – would take *cái* to be the head of a functional projection which takes Asp/MP as its complement, i.e. an aspect phrase, a non-epistemic modal phrase or a NegP, thus rendering AspP/MP a sub-

category of Laka's (1990) ΣP.[6] A strong feature of *cái* which can be checked by the interacting focus triggers the movement of post-verbal nominals. I subscribe to Shyu's head-analysis, and within a Minimalist framework I would assume that on some level of representation prior to, or coinciding with, spell-out, the *cái*-focus must have occupied the specifier position of the phrase headed by *cái*.

In Zhang's (1997, 2000) theory *cái* itself is not a head, but an adverb. It adjoins to some projection of *v*, i.e. the so-called (universally postulated) light verb above V in the Minimalist Program. *Cái* triggers an argument-related feature of the inflectional system (possibly [specificity]) to be strong in the relevant cases, thereby making its overt checking necessary. Some post-verbal constituents in focus which need not move if *cái* is not present are thereby forced to move in the presence of *cái* to ensure grammaticality. The problem for both accounts starts when foci that stay in a post-verbal position (examples (12) through (20)) enter the picture. Foci that do not move (overtly) cannot check any strong feature. They can, at most, move covertly, and in this case the checked feature would be weak. Foci interacting with *cái* thus check a strong feature in all those cases in which the focus appears to the left of *cái* (that includes the object-shift cases). The foci that may stay in a post-verbal position must somehow be catered for, or they must be explained away. Shyu explains them away by categorizing their type of focus as a mere PF focusing device which does not involve any feature checking. This is obviously an *ad hoc* solution, and it leaves the interpretational parallelism between the two different cases (pre-verbal and post-verbal foci) unaccounted for. Zhang, on the other hand, assumes weak feature checking in the cases of *cái*-foci that appear post-verbally on the surface. In her analysis, post-verbal-*cái* foci thus move covertly. The problem with this analysis is that the definiteness or specificity feature of the post-verbal focus triggers the head whose feature must get checked to be weak or strong: Definites make it strong, others make it weak. If a variant of generative syntax is assumed in which several candidates may compete, the "communication" problem vanishes. In such a framework Zhang's solution would nevertheless have to count as *ad hoc*.

This is not a syntactic study in the narrow sense of the word, and I only make use of some Minimalist terminology to name things. But what the review of Zhang's and Shyu's approaches has shown is that a real prob-

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[6] Although syntacticians may want to further split up AspP/MP, the main claim concerning the relative position of what Shyu calls FP seems to be well-grounded. For instance, if a modal verb precedes parametric *cái* or *dōu*, it is always interpreted epistemically, and negation words invariably follow *cái* immediately.

lem exists, no matter what theory of syntax we subscribe to: Most *cái*-foci must precede *cái*, some *cái*-foci must move to conform to this rule, and some *cái*-foci may not move, but still they are interpretable. Any linguistic framework which aims at analyzing comparable phenomena in a comparable way will be faced with a challenge here.[7]

B. Interaction with quantificational expressions[8]

Wang (1956) notices that *cái* must not be used if a modal verb intervenes between *cái* and the interacting focus, if the focus follows *cái*. An example taken from Paris (1981: 334) is given in (23) (=(8a)).

(23) *Wǒ (*cái) néng hē YĪ-BĚI jiǔ.*
    I   CAI can drink 1-CL:cup wine
    intended: 'I can (only) drink ONE GLASS of wine.'

Alleton (1972: 143) adds a parallel restriction for intervening negation:

(24) *Wǒ (*cái) méi yǒu WǓ-KUÀI qián.*
    I   CAI not have 5-CL:MU money
    intended: 'I (only) don't have FIVE KUAI.'

If, however, the focus precedes *cái*, modals or negation words are good immediately behind *cái*, as shown in (25) and (26) ((26) is taken from Alleton 1972: 138).

(25) *Chúfēi NǏ BĀNG WǑ, wǒ cái néng ná zhèi-jǐ-běn shū.*
    only.if you help I I CAI can take this-few-CL book
    'Only if YOU HELP ME can I take these few books.'

(26) *Nǐ zhǐyǒu KUÀI-PǍO, tā cái bù néng zhuīshàng nǐ.*
    you only fast-run (s)he CAI not can catch.up you
    'Only if you run fast will he not be able to catch up with you.'

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[7] Actually, this situation may be less of a challenge for a constraint-based Optimality-Theoretic account in the spirit of Prince & Smolensky (1993). Vikner (2001) is such an analysis dealing with object shift in Germanic, but the data covered by him are not sufficiently similar to allow for a smooth application to our case. I will not attempt to state any constraint-based argument here, although the final part of Zhang N. (2000) may be read as an approach heading in this direction.

[8] Parametric *cái* is the only parametric word for which I investigate this kind of behaviour. The reason for this is that *cái* is the only parametric word which tolerates foci to its right, and the structures for which problematic interactions with quantificational expressions can be found are typically of this kind. However, as we will see in the course of this sub-section, problematic data also exist for sentences with pre-*cái* foci (cf. the examples in (40) and (41)). For analogous cases with other parametric words, parallel investigations are a desideratum.

The modal verb behind *cái* and the negation behind *cái* in (25) and (26) are impeccable, so the restriction observable in (23) and (24) is only relevant if *cái*'s interacting focus follows *cái*. From a superficial syntactic point of view this is quite puzzling because phrases headed by a modal verb or negation are claimed to be the complements of *cái* (Shyu 1995; see section 3.1.1 above). The solution to this puzzle is probably essentially semantic or, more accurately, it concerns the syntax-semantics interface. The basic idea is that no inherently quantificational expression may intervene between *cái* and its interacting focus, with quantification taken here to cover more phenomena than is often assumed. A researcher who has investigated partially comparable data in detail is Beck (1996). Let us thus turn to her work for a moment.[9] Beck studies certain ungrammatical or uninterpretable structures in German such as the examples in (27) through (29). The general format of such configurations is given in (30) (Beck 1996: 1, 30f).

(27) [??]*Wen hat fast jeder wo getroffen?*[10]
    whom has almost everyone where met
    intended: 'Where did almost everyone meet whom?'
    [i.e. 'Which persons and which places are such that almost everyone met those persons at those places?']

(28) **Was glaubt Hans nicht, wer da war?*
    what believes Hans not who there was
    intended: 'Who does Hans not believe was there?'
    [i.e. 'Who is such that Hans does not know that that person was there?']

(29) [??]*Wen hat nur Karl wo getroffen?*
    whom has only Karl where met
    intended: 'Who did only Karl meet where?'
    [i.e. 'Which persons and which places are such that only Karl met those persons at those places?']

(30) $*[...X_i...[Q...[...t_i^{LF}...]]]$

In (27) the question word *wo* 'where' is c-commanded by the quantificational expression *fast jeder* 'almost everyone', but it would have to take scope over this very expression if it were to be interpreted, just like *wen* 'whom' does. Beck, as a follower of the mainstream paradigm of re-

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[9] Beck uses '*' to mark ungrammatical sentences, and '??' for uninterpretable sentences. The delimitation of these two categories appears to be partially dependent on one's theory. I adopt her conventions for the quoted examples.

[10] (27) is fine if *wo* 'where' is interpreted as an indefinite pronominal (=*irgendwo* 'somewhere') and not as a question word. This reading is not relevant here.

search dealing with the syntax-semantics interface, assumes that scope relations are reflected on some syntactic level of representation. On the latest level of syntactic representation, immediately prior to the interpretational component, all scope ambiguities that may be present on the surface must have been lifted. This syntactic level is a(n) L(ogical)F(orm)-level. On this level *wo* 'where' of sentence (27) would have to have moved covertly to a position dominating the quantificational expression *fast jeder* 'almost everyone'. The fact that (27) is uninterpretable shows that something has kept it from doing so. Beck assumes that it is the quantificational expression itself that blocks the required LF-movement. Note that an intervening proper name poses no interpretational difficulties; cf. (31) which does have a reading with a question word interpretation of both *wen* 'whom' and *wo* 'where'.

(31) *Wen   hat   Karl   wo   getroffen?*
      whom   has   Karl   where   met
      'Whom did Karl meet where?'

In (28) and (29), *wer* 'who' and *wo* 'where' cannot move across *nicht* 'not' and *nur* 'only', respectively, despite the need to move to a position where their scope is reflected by their (LF-)syntactic position. Therefore (28) and (29) are out. Beck (1996: 39) generalizes her findings as in (32).

(32) a. *Quantifier-Induced Barrier (QUIB):*
         The first node that dominates a quantifier, its restriction, and its nuclear scope is a Quantifier-Induced Barrier.
      b. *Minimal Quantified Structure Constraint (MQSC):*
         If an LF trace β is dominated by a QUIB α, then the binder of β must also be dominated by α.

(32a) states that QUIB's coincide with the highest node of tripartite quantificational structures in the sense of Lewis (1975) and his followers. (32b) defines those configurations that allow the co-existence of a QUIB and an LF-trace which is dominated by that QUIB: An LF-trace may only be dominated by a QUIB if the QUIB also dominates the binder of that trace, i.e. the moved element itself. Beck claims that quantification is the semantic notion which correctly covers the cases she investigates. To maintain this claim, she adopts Kratzer's (1989) theory of negation which subsumes negation under quantificational phenomena in a situation-semantics framework. Obviously, Beck's findings do not hold universally (cf., for instance, the good English translation of (29)). She speculates that the MQSC may be active in German for the following reason: Since in large portions of German sentences (more accurately: in the

so-called 'Mittelfeld') the surface positions of quantificational expressions must reflect their respective scopes, LF-movement must be heavily restricted. If it were not, LF-movement might confuse the correct relative position of quantificational expressions again. This brings us back to Chinese. Chinese, just like German, only allows few situations in which surface position and interpretational scope do not coincide (cf. Huang 1982 or Aoun & Li 1993). So, it will not be a surprise to find Beck's MQSC active in Mandarin. Note that Beck merely stipulates the MQSC, she does not tie it to other facts of German grammar in a theoretically explicit fashion, and I will not do this, either. But the mere fact that the MQSC can be shown to be active in Chinese just as in German makes it quite a useful stipulation.

How exactly does this carry over to Mandarin? Remember that (23) and (24), repeated in reverse order here as (33) and (34), are bad with *cái* only because the interacting focus follows *cái* and the modal verb or the negation word, respectively.

(33) *Wǒ   (*cái)   méi   yǒu   WǓ-KUÀI   qián.*
      I   CAI   not   have 5-CL:MU   money
      intended: 'I (only) don't have FIVE KUAI.'
(34) *Wǒ   (*cái)   néng   hē   YĪ-BĚI   jiǔ.*
      I   CAI   can   drink 1-CL:cup   wine
      intended: 'I can (only) drink ONE GLASS of wine.'

If we assume that foci interacting with *cái* must take wide scope relative to negation, Beck's restriction will keep the focus *wǔ-kuài (qián)* 'five Kuai' from doing so, because crossing the quantificational intervener *méi* 'not' is, according to the MQSC, impossible for the focus. The reading that is excluded in this scenario is: 'The amount of money "five Kuai" is the only thing I don't have(, but I have other things).' The other *a priori* possible interpretation ('It's not the case that I have only five Kuai') is excluded by the assumption that the *cái*-focus must have scope over negation – in the end this is reflected by the only possible surface order of the function words *cái* and *bù/méi* 'not' if they occur in a single clause. Beck's survey of possible interveners or QUIB's does not include modal verbs, whereas (34) is an example in which *néng* 'can', a modal verb, is the only possible intervener. Modality has convincingly been shown to be a quantificational phenomenon (cf. e.g. Kratzer 1981, 1991a), with the special kind of possibility or ability as in (34) amounting to existential quantification over certain possible worlds. (Necessity, on the other hand, involves universal quantification over certain possible worlds. Modality is discussed in more detail in sections 5.1 and 5.2.) So, if the modal verb

is the intervener in (34), the interpretation 'Only of the amount "one glass of wine" is it true that I can drink it' is excluded by Beck's generalization, because the *cái*-focus cannot move across the modal verb.[11] Less theory-specifically, we may just state descriptively that the quantificational expression *néng* 'can' keeps the *cái*-focus from taking scope on the level of *cái*. If there is another logically possible interpretation in which *néng* 'can' would take wide scope (something like: 'It is possible that I drink only one glass of wine'), this interpretation is again excluded because its scope relations do not reflect the surface order of *cái* and *néng* 'can'.

We have two descriptive generalizations so far: The fixed order of mono-clausal *cái* on the one hand, and of modal verbs and negation on the other, determines the scope relations between the *cái*-focus and the modal verb or negation; a sentence with *cái* is uninterpretable or ungrammatical if a modal verb or a negation word (i.e. an inherently quantificational expression) intervenes between *cái* and a post-verbal focus (Beck's MQSC).

But this is not the whole story yet. To see what the problem is, consider (35) first.

(35) a. *?Suŏyŏude xiăoháir dōu cái WŬ-SUÌ.*
      all   child   each CAI 5-CL:year.of.life
      'All children are only FIVE YEARS old.'

    b. *?Měi-ge rén dōu cái bĭ Lăo Lĭ gāo YĪ-LÍMĬ.*
      every-CL person each CAI compared.with Old Li tall 1-CL:cm
      'Every person is only ONE CENTIMETRE taller than Old Li.'

These sentences have universally quantified subjects which trigger the obligatory use of the distributivity marker *dōu* (on *dōu* as a distributivity marker, see Lin 1996, 1998), and they can have *cái*-foci at the same time.[12] So, it is in principle possible to have both phenomena side by side

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[11] Beck does not consider modal verbs. I guess this is so because modal verbs in German do not display the MQSC-effect as observed above; cf. (i).

(i) *Wen darf Karl wo treffen?*
    whom may Karl where meet
    'Whom may Karl meet where?'

In (i) a reading in which persons and places are asked for is easy to get. In this reading the modal verb takes scope under the question words, so *wo* 'where' must be able to move covertly across quantificational *darf* 'may' in (i). I do not know how this comes about.

[12] My consultants prefer *zhĭ* 'only' to *cái* in these sentences. Nevertheless, *cái* is clearly possible, and while the sentences in (35) are judged as odd, (36b) and especially (37b) invariably provoke stronger reactions of refutation.

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in a single sentence. But this only holds true as long as the fixed scope order which is predetermined by the relative position of distributive *dōu* and *cái* is not confused by a *cái*-focus to the left of distributive *dōu*. This is shown in (36) and (37).

(36) a. *?Zhèlĭ suŏyŏude rén dōu zhĭyŏu ZHŌUMÒ cái gōngzuò.*
      here all   person each only   week-end CAI work
      intended: 'Here all people only work during THE WEEK-ENDS.'

    b. **Zhèlĭ suŏyŏude rén zhĭyŏu ZHŌUMÒ dōu cái gōngzuò.*
      here all   person only   week-end each CAI work
      intended: 'Here all people only work during THE WEEK-ENDS.'

(37) a. *?Měi-ge rén dōu chúfēi NĬ LÁI cái qù.*
      every-CL person each only.if you come CAI go
      'Everybody only goes if YOU COME.'

    b. **Měi-ge rén chúfēi NĬ LÁI dōu cái qù.*
      every-CL person only.if you come each CAI go
      intended: 'Everybody only goes if YOU COME.'

    c. **Chúfēi NĬ LÁI, měi-ge rén dōu cái qù.*
      only.if you come every-CL person each CAI go
      intended: 'Everybody only goes if YOU COME.'

As long as the *cái*-foci remain to the right of distributive *dōu* ((35), (36a) and (37a)), the sentences are fine, or at least interpretable; as soon as they appear higher up in the sentence than *dōu* the sentences become ungrammatical. Note that if no scope-bearing or scope-marking element precedes *cái*, *cái*-foci at the left periphery of sentences are impeccable.

(38) *Zhĭyŏu ZHŌUMÒ wŏmen cái gōngzuò.*
    only   week-end we   CAI work
    'We work only ON WEEK-ENDS.'

(39) *Chúfēi NĬ LÁI, wŏ cái qù.*
    only.if you come I CAI go
    'Only if YOU COME will I go.'

The general picture which emerges from these data is that no quantificational expression may intervene between *cái* and its interacting focus, neither to the left, nor to the right.[13] This has only been shown in detail

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[13] This is reminiscent of Aoun & Li's (1993) Minimal Binding Requirement which bars quantifiers from intervening between an operator and the variable bound by the operator. However, I do not analyze configurations of *cái*-foci and *cái* as operator-variable structures here (see section 3.4). Either this is inadequate and the data should be analyzed so as to allow for being subsumed under the Minimal Binding Require-

for negation, modal verbs and distributive universal quantification, but the generalization carries over to other quantifying expressions. (40) and (41) are data with adverbial quantifiers which support the claim:

(40) a. *Píngcháng wǒmen zhǐyǒu ZHŌUMÒ cái gōngzuò.*
          usually   we   only   week-end CAI work
          'We usually only work ON WEEK-ENDS.'

      b. *Wǒmen píngcháng zhǐyǒu ZHŌUMÒ cái gōngzuò.*
          we   usually   only   week-end CAI work
          'We usually only work ON WEEK-ENDS.'

      c. **Wǒmen zhǐyǒu ZHŌUMÒ píngcháng cái gōngzuò.*
          we   only   week-end usually CAI work
          intended: 'We usually only work ON WEEK-ENDS.'

      d. **Zhǐyǒu ZHŌUMÒ wǒmen píngcháng cái gōngzuò.*
          only   week-end we   usually CAI work
          intended: 'We usually only work ON WEEK-ENDS.'

(41) a. *Yǒude shíhou wǒmen zhǐyǒu ZHŌUMÒ cái gōngzuò.*
          sometimes   we   only   week-end CAI work
          'Sometimes we only work ON WEEK-ENDS.'

      b. *Wǒmen yǒude shíhou zhǐyǒu ZHŌUMÒ cái gōngzuò.*
          we   sometimes   only   week-end CAI work
          'Sometimes we only work ON WEEK-ENDS.'

      c. **Wǒmen zhǐyǒu ZHŌUMÒ yǒude shíhou cái gōngzuò.*
          we   only   week-end sometimes CAI work
          intended: 'Sometimes we only work ON WEEK-ENDS.'

      d. **Zhǐyǒu ZHŌUMÒ wǒmen yǒude shíhou cái gōngzuò.*
          only   week-end we   sometimes CAI work
          intended: We sometimes only work ON WEEK-ENDS.'

Although both *píngcháng* 'usually' and *yǒude shíhou* 'sometimes' may, just like *cái*-foci, in principle occur both in preverbal and in sentence-initial position, they must not intervene between *cái* and its interacting focus. The penultimate version of the descriptive generalization concerning the interaction of *cái*, *cái*-foci and other quantificational expressions is given in (42).

(42) No quantificational expression may intervene between parametric *cái* and its interacting focus. (to be revised)

A last refinement is necessary. In the examples (43a-c) it is not enough to refer merely to linearization and intervening quantifying expressions.

ment, or the Minimal Binding Requirement and the restriction under dicussion here converge on some higher level of analysis.

(43) a. *Chúfēi NǏ bù lái, wǒ cái qù.*
          only.if you not come I CAI go
          'Only if YOU don't come will I go.'

      b. *Chúfēi NǏ néng lái, wǒ cái qù.*
          only.if you can come I CAI go
          'Only if YOU can come will I go.'

      c. *Chúfēi suǒyǒude péngyoumen dōu LÁI, wǒ cái qù.*
          only.if all   friends   each come I CAI go
          'Only if all my friends COME will I go.'

In (43a) and (43b) the very expressions which were not allowed to intervene between *cái* and its interacting focus in (33) and (34) above, namely *bù* 'not' and *néng* 'can', are now possible interveners. Even if we take into account that these words do, on the surface, not intervene configurationally – following any sensible syntactic tree from the focus *nǐ* 'you' to *cái* will not lead via a node immediately dominating *bù* or *néng* – the problem does not vanish. This is so because in (43c) the universally quantified embedded subject *suǒyǒude péngyoumen* 'all friends' precedes the focus, but it intervenes configurationally. So, in the case of embedded clauses with *cái*-foci neither the linear nor the configurational intervening of inherently quantificational expressions prevents good interpretations and grammaticality. (44) is thus a more accurate descriptive generalization than (42) above.

(44) Within the clause which hosts parametric *cái*, no quantificational expression may intervene between *cái* and its interacting focus.

In (45) the descriptive generalizations of this section are repeated. If they are descriptively adequate, they should cover all and only those cases in which the use of parametric *cái* is impossible.

(45) a. Movement of nominals and (un)grammatical *cái*:
          Parametric *cái* must not be used if the focus *cái* is to interact with can in principle be moved, but has not moved away from its post-verbal base position to a position preceding *cái*. Conversely, sentences with *cái* are also ungrammatical if a nominal has been moved to a pre-verbal position from its post-verbal base position although it must not be moved because it is indefinite, or less referential than indefinite.

      b. Interaction with quantificational expressions:
          Within the clause which hosts parametric *cái*, no quantificational expression may intervene between *cái* and its interacting focus.

3.2   TRIGGERS AND CONSTRAINTS: PARAMETRIC *JIÙ*

I know of no previous attempt at determining the factors which, apart from the focus-semantic requirements discussed in the following chapter, render the use of parametric *jiù* obligatory or impossible in a given sentence. This is quite remarkable if we recall from the preceding section how much attention has been paid to facts of object shift that may be observed in connection with the use of *cái*. The main finding of this section is that the foci interacting with parametric *jiù* invariably precede *jiù*, a fact which makes *jiù* – as opposed to *cái* – a more prototypical representative of the category to which all of parametric *cái*, *jiù*, *dōu* and *yě* belong. As regards *jiù*'s structural position the results concerning parametric *cái* fully carry over (cf. section 3.1.2 and p. 58, in particular): *Jiù* is a functional head at the left periphery of the predicative complex.

3.2.1   *Where parametric* jiù *must be used*

A. Zhĭyào-*foci and* zhĭyào-C-*topics as triggers of* jiù
For a sentence in which parametric *jiù* must not be left out, consider (46).

(46)   *Zhĭyào xīngqītiān TIĀNQÌ   HĂO,   wŏ *(jiù) qù pá   shān.*
    if   Sunday   weather good I   JIU   go climb mountain
    'I go mountain-climbing on Sundays if THE WEATHER IS FINE.'

If compared with *cái*-sentences, the familiar facts about (46) include the following: *Jiù* is preceded by a focus in a subordinate clause, and the subordinate clause receives a conditional interpretation.[14]

Now compare (46) with (47) to see that the use of *zhĭyào* '[preliminarily:] if' is crucial for the grammaticality facts concerning *jiù*.

(47)   *Rúguŏ xīngqītiān tiānqì   hăo,   wŏ (jiù) qù pá   shān.*
    if   Sunday   weather good I   JIU   go climb mountain
    'If the weather is fine on Sundays, I go mountain-climbing.'

(46) and (47) are segmentally identical, except for the use of *zhĭyào* as opposed to *rúguŏ* at the beginning of the first clause. While the use of *zhĭyào* leaves the speaker no choice, starting the sentence with *rúguŏ* does not determine anything about the use of *jiù* in the second clause. Let us look a bit closer at the element *zhĭyào* to understand better what the reasons for this difference are. Another example of a sentence with *zhĭyào* can be found in (48).

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[14] The second point actually requires a more detailed discussion. Part of this discussion starts immediately below, and more will be said in section 5.1. The semantics of conditionals is treated in sections 4.1.5 and 4.2.3.

(48)   *Zhĭyào   NĬ   LÁI,   wŏ   *(jiù)   qù.*
    if   you   come I   JIU   go
    'If YOU COME, I will go.'

Literally, *zhĭ-yào* means 'only-need' or 'it is only necessary'. Another good translation of (48) would accordingly be 'In order for me to go you only have to come'. It is positively not the case that speakers of Mandarin no longer feel the *only*-meaning and the necessity-meaning of the components of *zhĭyào*, or that its lexical origins are merely a historical fact. Quite the opposite: Most spontaneous translations of *zhĭyào*-sentences will contain pertinent *only*-words and necessity operators. Two consequences follow, a welcome one and a not-so welcome one.

The good news first: An *only*-word like *zhĭ(yào)* requires a focus or C-topic (in the sense of Büring 1997, to appear) in its c-command domain, i.e. somewhere in the rest of the same clause in our case.[15] In other words: Whenever *zhĭyào* is used, the presence of an information-structurally distinguished category preceding the position of *jiù* is ensured (remember that *jiù* is a constituent of the following clause). That is tantamount to saying that (46), repeated here as (49), is good as a (partial) answer to either of the questions in (50a) and (50b), provided the information structure is specified accordingly; it is, however, bad as an answer to (50c), because neither a focus nor a C-topic would precede *jiù* in this context. No such effects occur with *rúguŏ*-sentences as in (47).

(49)   *Zhĭyào xīngqītiān tiānqì   hăo,   wŏ jiù qù pá   shān.*
    if   Sunday   weather good I   JIU   go climb mountain
    'I go mountain-climbing on Sundays if the weather is fine.'

(50)   a.   *On what condition do you go mountain-climbing on Sundays?*
      b.   *What do you usually do on Sundays, depending on the weather?*
      c.   *What do you do on Sundays if the weather is fine?*

This brings us closer to assimilating the case of *jiù* to the case of *cái*. But now another question arises: If an *only*-word precedes *jiù* in *zhĭyào*-sentences, why, then, is the use of *jiù* obligatory, and not the use of *cái*? Recall from section 3.1.1 that what may sloppily be called *only*-foci trigger the use of *cái*. Without stating the exact semantic nature of *zhĭyào*-foci here (see section 5.1), let us merely note one important fact about

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[15] The notion of C-topics will be discussed at length in section 4.2.4. To understand the present discussion without making a loop ahead and back again, readers who are not familiar with Büring's C-topics can safely substitute any intuitive idea of contrastive topics for the term 'C-topic' at this stage of the discussion.

them: Although *zhǐyào* contains an *only*-word, *zhǐyào*-clauses and Mandarin *only-if*-clauses, i.e. those subordinate clauses which trigger the use of *cái*, have different meanings. Compare (48) with (51) (=(1c)).

(51) *Zhǐyǒu NǏ LÁI, wǒ . cái qù.*
      only.if you come I CAI go
      'Only if YOU COME will I go.'

(51) is not true if the addressee does not come, but the speaker goes. In identical conditions (48) may be true, for instance if the addressee's coming is not the only incentive to go. Therefore, the interpretations of (48) and (51) differ. The conclusion is that *zhǐyào*-foci and *only-if/chúfēi*-foci are not the same, and that the use of *jiù* as opposed to *cái* thus reflects a different (focus) semantics.

At this point we may state the descriptive generalization in (52).

(52) Obligatory *jiù* (to be revised):
      Parametric *jiù* is used if a *zhǐyào*-focus or *zhǐyào*-C-topic precedes the structural position of *jiù*.

Admittedly, the scope of the generalization in (52) may appear to be frustratingly narrow, since *jiù* is used in so many sentences in which *zhǐyào* is not used (cf. the overview in section 2.2.1). Mandarin simply does not have many lexical items which ensure focus readings of the *jiù*-triggering kind. Still, more contexts exist in which speakers, as in *zhǐyào*-sentences, have no choice but to use *jiù*; cf. (53) for another case of this kind.

(53) *Guāng ZHÈ-JIÀN SHÌ *(jiù) shuōmíng tā hěn nénggàn.*
      alone this-CL matter JIU demonstrate (s)he very competent
      'This matter alone demonstrates that (s)he is very competent.'
      (hx: 347)

If *guāng* 'alone, merely' is used adnominally, it is interpreted like post-nominal *alone* in English. As with example (49) above, we are not interested in the exact difference between *only*-foci and *alone*-foci at this stage of the investigation. What matters here is that (53) does not mean 'The only thing that demonstrates his/her competence is this matter', i.e. the interpretation the sentence would have with *zhǐyǒu* 'only' and *cái* instead of *guāng* and *jiù*. We thus know that the focus interacting with *jiù* in (53) is not interpreted the way *cái*-foci are interpreted and that *guāng*, like *zhǐyào*, is an element which triggers the use of *jiù*.

If we assume that it is possible to characterize the terms 'zhǐyào-focus' and 'zhǐyào-C-topic' irrespective of the use of *zhǐyào* or any other focus marker, we may retain (52) by saying that '*zhǐyào*-focus' and '*zhǐ-*

yào-C-topic' are just names for the postulated semantically constant kinds of foci or C-topics invariably preceding *jiù*. Remember that this chapter is not concerned with explicating the focus semantics of specific sentences, but rather with understanding the (non-)occurrence of parametric words provided the focus semantic facts are kept constant and appropriate.

Recall from above that we still have to mention a bad consequence of the fact that *zhǐyào*-clauses contain an *only*-word and a necessity operator. The bad news is about an apparent syntax-semantics mismatch.

(54) *Zhǐ-yào nǐ nǔlìde dú shū,*
      only-must you hard-working study book
      nǐ jiù kěyǐ kǎo-shang dàxué.
      you JIU can pass.exam-onto university
      'If you study hard, you can pass the university entrance examination.'/'You only have to study hard to be able to pass the university entrance examination.'

Two translations have been given for (54). The first one with an *if*-clause nicely reflects the subordinating character of *zhǐyào* (and *zhǐyào* is invariably listed as a subordinating conjunction in grammars of Mandarin), the second one does justice to the presence of an *only*-morpheme (*zhǐ*) and a necessity operator (*yào*) in the first clause. The dilemma arises from the fact that, in English, we cannot have both at the same time: an initial subordinate clause, and an *only-have-to*-sequence. If we try, we get 'If you only have to study hard, you can pass the university entrance examination', and this is not quite what (54) means. This sentence is so different from (54) because the necessity operator *have to* in a subordinate *if*-clause cannot take scope over the whole sentence, and that is precisely what *zhǐyào*'s necessity operator in (54) does. Therefore, if the specific modality of (54) is to be rendered in English, the first English clause must not be subordinate, and the Mandarin main clause must be changed into an English purposive clause with scope below *have to*.

This dilemma is by no means rare, and many researchers, without mentioning the problem, often resort to English matrix-clause translations of *zhǐyào*-clauses in order to do justice to the presence of a marker of necessity. The problem is not confined to parametric *jiù*; it extends to many uses of *cái* (and *zài*; see section 4.5 on *zài*), and the whole of section 5.1 will be dedicated to the discussion of alleged syntax-semantics mismatches of this kind. Still, there is a good reason why the problem has already been mentioned here: In order to find out why the use of *jiù* is obligatory after *zhǐyào*-clauses, the internal make-up of the word *zhǐyào*

had to be discussed. It was only possible to put the focusing nature of *zhǐyào* to use at the price of also recognizing the modal component of *zhǐyào*. Now we know that we can attribute the obligatoriness of *jiù* after *zhǐyào*-clauses to the obligatoriness of a special kind of focus or C-topic following *zhǐ(yào)*, but we are confronted with the fact that, at the present moment, we cannot reconcile the subordination of *zhǐyào*-clauses with the wide scope of (*zhǐ)yào*'s necessity operator.

B. Problems with the generalization

Generalization (52) predicts that sentences with preverbal *zhǐyào*-foci or preverbal *zhǐyào*-C-topics, but without *jiù* should not exist. Examples such as (55) are attested, though, and (55) is not some utterance distorted by performance factors, but rather a sentence from a novel (adapted from Hou ed. 1998 [= hx]).

(55) *Zhǐyào* [*WǑ BǍ WǑ DUÌ TĀ-DE   YÌNXIÀNG   SHUŌCHULAI*]_{C-topic}
       if   I   BA I to   he-ATTR impression speak.out
       tā [   ] *BÙ   HUÌ   GUÀIZUÌ   WǑ.*
       he   not   will   blame   I
       'If [I TOLD HIM WHAT MY IMPRESSION OF HIM WAS]_{C-topic}, he WOULDN'T BLAME ME.' (hx: 754)

In (55) *jiù* is not used in the position where the empty brackets have been inserted, but it may be used. Hou annotates such examples as being possible in colloquial language, or if some other adverb (*fǎcī*) is used. In fact, all of the examples cited in Hou (ed.) (1998) have negation words or adverbs encoding some kind of universal quantification following the structural position of (optional) *jiù*; the adverbs are *yīdìng* 'necessarily, positively', *dōu* 'each/all' (= distributive *dōu*; cf. section 2.3.2), *quán* (a stylistic variant of distributive *dōu*) and *zǒng* 'always'.

Even if we ignore the colloquial cases of *jiù*-ellipsis, the examples with the quantificational adverbs and negation words hint at a systematic phenomenon. It would have to be discussed in a study of the interaction of different kinds of function words in the left periphery of Mandarin predicates. In the present study only part of the groundwork for such an ambitious project is laid.

Within the narrower scope of this study, I will maintain the generalization in (52), well aware of the fact that it is too strong to account for cases as in (55).

3.2.2   Factors constraining the use of parametric *jiù*

Section 3.2.1 has taught us that whenever a focus or C-topic of the appropriate kind precedes the structural position of *jiù*, *jiù* must be used. If

we were to turn the generalization in (52), repeated here as (56) for convenience, into a biconditional as in (56'), we would have to show that parametric *jiù* is never used if the interacting focus follows *jiù*.

(56) Obligatory *jiù* (to be revised):
      Parametric *jiù* is used if a *zhǐyào*-focus or *zhǐyào*-C-topic precedes the structural position of *jiù*.

(56') Obligatory *jiù*:
       Parametric *jiù* is used i f f a *zhǐyào*-focus or *zhǐyào*-C-topic precedes the structural position of *jiù*.

A sentence which seems to obviate the statement of the biconditional to replace (56) is given below.

(57) *Wǒ   jiù   xiǎng   hē   YĪ-BĒI   CHÁ.*
      I   JIU   like   drink 1-CL:cup tea
      'I would only like to drink A CUP OF TEA.'

The polite person uttering (57) expresses that he or she wants to drink a cup of tea, and nothing else but a cup of tea. In the English translation the use of *only* ensures this interpretation. In the Mandarin version, *jiù* is used preceding the focus *yī-bēi chá* 'a cup of tea', and the use of *jiù* is not ungrammatical or infelicitous. Fortunately, this does not affect the generalization in (56') that foci interacting with parametric *jiù* must precede *jiù*, simply because *jiù* in (57) is not an instance of parametric *jiù*, but of the focusing use of *jiù*. In section 2.2.5 this use type has been characterized, and its separation from the parametric use type has been justified, one argument being that *jiù* as in (57) must be stressed, whereas parametric *jiù* is never stressed, just as parametric *cái*, *dōu* and *yě*. There is also an important semantic difference: While the meaning *jiù* contributes in (57) entirely equals that of *zhǐ* 'only', this is never the case if the focus precedes *jiù*. The situation concerning *cái*-foci which follow *cái* was different (see section 3.1.2): Post-*cái* foci of the parametric kind could not be explained away, simply because there was no discernible difference in the relevant meaning no matter whether *cái* preceded or followed its interacting focus.

According to what will be stated in section 4.2, the meaning we should expect for (57) if we were dealing with parametric *jiù* would be something like 'I would like to drink a cup of tea, and I might possibly like to drink something else as well, but it is not the case that I want to drink everything else'. This is not what (57) means, because (57) explicitly excludes the possibility that the speaker wants to drink anything else in addition to a cup of tea.

At this point, readers may have a last suspicion. In section 3.1.2 a lot of space was devoted to movement facts: Some canonically post-verbal *cái*-foci could move to the left of *cái*, rendering the otherwise bad sentences grammatical. This contrast is reproduced in (58) (cf. (7)).

(58) a. **Lǎo Wáng   cái   mǎi-le   ZHÈ-běn   shū.*
     Old Wang   CAI   buy-ASP   this-CL   book
     intended: 'Old Wang has bought only THIS book.'
   b. *Lǎo Wáng   (zhǐyǒu) ZHÈ-běn shū   cái   mǎi-le.*
     Old Wang   only   this-CL   book CAI   buy-ASP
     'Old Wang has bought only THIS book.'

(58a) is bad because a nominal which may move to the left of *cái* has not done so. Accordingly, (58b) is fine. In the case of *cái*, this kind of remedy was restricted to definite nominals and bare nouns in habitual sentences, anything further down the definiteness hierarchy could not be moved. Thus, if anything could help potential post-*jiù* foci, it should be movement. (59) tests this for sentences which are parallel to the ones in (58), but this time parametric *jiù* is used instead of *cái*.

(59) a. **Lǎo Wáng jiù   mǎi-le   ZHÈ-běn shū.*
     Old Wang   JIU   buy-ASP this-CL   book
     intended: 'Old Wang has bought THIS book.'
     [good as: 'Old Wang has bought only THIS book.']
   b. **Lǎo Wáng   ZHÈ-běn shū jiù   mǎi-le.*
     Old Wang   this-CL   book JIU   buy-ASP
     intended: 'Old Wang has bought THIS book.'

Both sentences in (59) are bad if *jiù* is to be interpreted as parametric. (59a) has a good reading, but it involves *jiù* in its focusing use: 'Old Wang has only bought THIS book' (this is parallel to the case of (57) above). A parametric reading would be 'Old Wang has bought THIS book(, and he may have bought other books, as well, but he has not bought all books)'. If anything can move in *jiù*-sentences, the most definite nominals should be among the movable nominals. Since they cannot move, we are left with the conclusion that parametric *jiù* may never be used if it precedes the (ordinary) syntactic position of its interacting focus. Therefore, we do not need a further restriction parallel to the movement constraint for *cái* as formulated in (21)/(22), and (60) (=(56')) is our last word concerning the distribution of parametric *jiù*.

(60) Obligatory *jiù*:
     Parametric *jiù* is used iff a *zhǐyào*-focus or *zhǐyào*-C-topic precedes the structural position of *jiù*.

3.3   TRIGGERS AND CONSTRAINTS: PARAMETRIC *DŌU* AND PARAMETRIC *YĚ*

In this section, obligatory and ungrammatical uses of parametric *dōu* and *yě* are presented together. This is done for the following reason: The descriptive generalizations that are needed overlap heavily, and the differences and similarities can probably best be demonstrated if they are dealt with simultaneously.

I will first concentrate on contrasts having to do with movement, and the relative position of *dōu* and *yě* and their foci (section 3.3.1); section 3.3.2 will provide first attempts at stating the descriptive generalizations concerning the obligatory use of parametric *dōu* and parametric *yě*. I will then look at the relevant facts from the perspective of generalizations that only hold for sub-domains of the whole distribution of parametric *dōu* or *yě* (section 3.3.3); this amounts to stating some restrictions having to do with ungrammatical uses of *dōu* or *yě*. The section concludes with diagram representations of the investigated domains and with a final statement of the descriptive generalizations (section 3.3.4).

Quite a few generalizations of this section do not seem to have been stated before. This is remarkable since portions of the empirical domain covered belong to the classic problems of Chinese linguistics (the *lián…dōu/yě*-construction, for instance, sequences of negative polarity items and *dōu/yě*, or the *wh*-word…*dōu/yě*-construction). I take this as further encouragement to concentrate on facts of distribution and natural-class constitution before turning to more theoretical challenges.

3.3.1   *The relative position of parametric* dōu/yě *and their interacting foci or* wh-*words*

The sentences in (61) illustrate the most important descriptive generalization concerning the relative position of *dōu/yě* and their interacting categories: All interacting foci or *wh*-words precede *dōu* and *yě*.

(61) a. *Lián MĚIJÙN dōu xiǎng   cānjiā!*
     even Meijun DOU want   attend
     'Even MEIJUN wants to attend!'
   a'. *Xiǎo Wáng lián JĪ-RÒU   dōu bù   chī!*
     Little Wang even chicken-meat   DOU not   eat
     'Little Wang doesn't even eat CHICKEN!'
   a''. **Xiǎo Wáng   dōu bù   chī lián   JĪ-RÒU!*
     Little Wang   DOU not   eat   even chicken-meat
     intended: 'Little Wang doesn't even eat CHICKEN!'

b. *Lián MĚIJÙN yě xiǎng cānjiā!*
   even Meijun YE want attend
   'Even MEIJUN wants to attend!'

b'. *Xiǎo Wáng lián JĪ-RÒU yě bù chī!*
   Little Wang even chicken-meat YE not eat
   'Little Wang doesn't even eat CHICKEN!'

b''. **Xiǎo Wáng yě bù chī lián JĪ-RÒU!*
   Little Wang YE not eat even chicken-meat
   intended: 'Little Wang doesn't even eat CHICKEN!'

c. *Shéi yě bú huì guài nǐ!*
   who YE not will blame you
   'No-one will blame you!' (rp:7)

c'. *Tā shénme yě bù chī.*
   (s)he what YE not eat
   '(S)he doesn't eat anything.'

c''. **Tā yě bù chī shénme.*
   (s)he YE not eat what
   intended: '(S)he doesn't eat anything.'

Sentences (61a-a'') illustrate that constituents canonically appearing in post-verbal position must be moved to a position preceding *dōu* if they are to interact with parametric *dōu*.[16] The positional pattern of parametric *yě* and its focus is identical to that of *dōu* and its focus: Foci with canonically post-verbal positions must move to a position preceding *yě*.[17] The same is true of sentences in which a *wh*-word/indefinite pronominal conspires with *yě* to express some kind of universal quantification: The *wh*-word, if it is a canonically post-verbal element such as the object pronominal *shénme* 'who' in (61c'), must have moved to a position preceding *yě*. ((61c'') does have a good reading as a question: 'What else is it that (s)he doesn't eat?'; this reading is irrelevant here.)

I will now discuss each of (61a-b) in more detail. The phenomena documented in (61c) should be treated alike; since a treatment would, however, turn out extremely clumsy before we have gained the insights of sections 4.3.3 and 4.3.4, I will postpone this discussion, and I will tacitly incorporate some of the relevant facts into the descriptive generalizations below.

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[16] See section 2.3.3 for cases in which putative foci may follow *dōu*. There, I argued that such cases belong to a different, viz. emphatic, use type.

[17] Refer back to section 2.4.3 for the focusing use of *yě* in which interacting foci may precede or follow *yě*.

A. Dōu-foci must precede parametric dōu

We have already seen in the x'/x''-sentences of (61) above that direct objects must be preposed if they constitute foci interacting with parametric *dōu*. (62) illustrates this once again, supplemented with examples showing that this kind of object-preposing is optional if *dōu* is not used.

(62) Preposed objects:

   a. *Xiǎo Wáng (lián) JĪ-RÒU dōu bù chī.*
      Little Wang even chicken-meat DOU not eat
      'Little Wang doesn't even eat CHICKEN.' (cf. (61a'))

   b. **Xiǎo Wáng dōu bù chī (lián) JĪ-RÒU.*
      Little Wang DOU not eat even chicken-meat
      intended: 'Little Wang doesn't even eat CHICKEN.' (cf. (61a''))

   c. *Xiǎo Wáng bù chī jī-ròu.*
      Little Wang not eat chicken-meat
      'Little Wang doesn't eat chicken.'

   d. *Xiǎo Wáng jī-ròu bù chī.*
      Little Wang chicken-meat not eat.
      'Chicken, Little Wang doesn't eat that.'

Moreover, (62a) and (62b) show that the regularity concerning the preposing of objects in *lián...dōu*-constructions is not tied to the use of *lián* 'even': As long as the accent on the focus is strong enough, an *even*-reading is ensured by mere intonation and the use of *dōu*; in these cases the object must also be preposed. These are instances of emphatic assertions, a notion that will only be alluded to in this chapter; it will be discussed in more detail in section 4.3.2. (62c) and (62d) constitute the background against which these data must be judged: In the absence of *dōu*, the object may be preposed, but it need not.

Recall from section 3.1.1 that object-preposing in the case of parametric *cái* was limited to objects of high referentiality. The only nominals that could be moved were definites and bare nominals in habitual sentences. Zhang N. (2000: 233) has observed that foci used with parametric *dōu* may have a less referential status and still move to a position preceding the verb; cf. (63).

(63) *Tā píngcháng (lián) YĪ-XIĒ JIÙ XÌNFĒNG dōu bǎocún.*
      (s)he usually even 1-CL:some old envelope DOU keep
      '(S)he usually even keeps SOME OLD ENVELOPES.'

In this habitual sentence the object nominal *yī-xiē jiù xìnfēng* 'some old envelopes' cannot possibly denote a specific set of envelopes, simply because the habituality of the sentence has it that quantification over

different events with different sets of envelopes is involved in the interpretation of the sentence. Zhang's observation can be generalized: Any postverbal complement-like constituent in focus and many verbal constituents in focus may and must be preposed if they are to interact with parametric *dōu*. Let us test this for some more classes of elements that usually occur behind the structural position of *dōu*.

(64) Negative polarity items/Measure phrases denoting (contextually) minimal quantities in object function:

    a. *Lǎo Lǐ (lián) YĪ-JÙ   HUÀ   dōu shuōbuchūlai.*
        Old Li even 1-CL:speech.unit speech DOU not.be.able.to.speak
        'Old Li couldn't even say A WORD.'

    b. **Lǎo Lǐ dōu shuōbuchulai   (lián) YĪ-JÙ   HUÀ.*
        Old Li DOU not.be.able.to.speak even 1-CL:speech.unit speech
        intended: 'Old Li couldn't even say A WORD.'

    c. *Lǎo Lǐ   shuō-le   yī-jù   huà.*
        Old Li speak-ASP 1-CL:speech.unit speech
        'Old Li said something.'

The negative polarity item in the object function in (64a) must be moved to a position preceding *dōu*. If it remains *in situ*, the sentence gets ungrammatical as in (64b). (64c) demonstrates that the string *yī-jù huà* 'a speech unit' may appear in post-verbal position; but in this case it is not interpreted as a negative polarity item, nor is *dōu* used in this case.

Negative polarity items or measure phrases denoting (contextually) minimal quantities may also be used as canonically post-verbal complements of frequency or duration, as witnessed by (65) and (66).

(65) Negative polarity items/Measure phrases denoting (contextually) minimal quantities as canonically post-verbal complements of frequency:

    a. *Tā   (lián) YĪ-CÌ   dōu   méi   lái-guo.*
        (s)he even 1-CL:time DOU not.have come-ASP
        '(S)he hasn't even come ONCE!' (Paris 1994: 249)

    b. **Tā   dōu   méi   lái-guo   (lián)   YĪ-CÌ.*
        (s)he DOU not.have come-ASP even 1-CL:time
        intended: (S)he hasn't even come ONCE!'

    c. *Tā   lái-guo   yī-cì.*
        (s)he come-ASP 1-CL:time
        '(S)he's been here once before.'

(66) Negative polarity items/Measure phrases denoting (contextually) minimal stretches of time as canonically post-verbal complements of duration:

    a. *Tā   (lián) YĪ-HUÌR   dōu   zuòbuzhù.*
        (s)he even 1-CL:moment DOU unable.to.sit.still
        '(S)he can't sit still for even A SECOND!'

    b. **Tā dōu zuòbuzhù   (lián) YĪ-HUÌR.*
        (s)he DOU unable.to.sit.still even 1-CL:moment
        intended: '(S)he can't sit still for even A SECOND!'

    c. *Tā   zuò-zhù-le   yī-huìr   le.*
        (s)he sit-still-ASP 1-CL:moment PRT
        '(S)he sat still for a moment.'

    d. *Tā   (lián) YĪ-FĒN   zhōng   dōu   méi   pǎo.*
        (s)he even 1-CL:minute clock DOU not.have run
        '(S)he hasn't run for even A MINUTE!'

    e. **Tā   dōu   méi   pǎo (lián) YĪ-FĒN   ZHŌNG.*
        (s)he DOU not.have run even 1-CL:minute clock
        intended: '(S)he hasn't run for even A MINUTE.'

    f. *Tā   pǎo-le   yī-fēn   zhōng   le.*
        (s)he run-ASP 1-CL:minute clock PRT
        '(S)he's run for a minute.'

In both of (65) and (66) the pattern found to hold of objects likewise emerges: In spite of their canonical position behind the verb (cf. the c-sentences and (66f)), negative polarity items and (contextually) minimal measure phrases acting as complements of frequency or duration are preposed if they interact with *dōu*.

If we turn to the verbal categories, we find the same pattern with non-stative verbs (cf. (67a)) and tight verb-object constructions (cf. (67b)), but not with gradable properties expressed by stative verbs (cf. (67c) and (67d)).[18] All possible cases involve verb-copying and negation.

(67) a. *Lǎo Lǐ   lián LÁI   dōu   méi   lái.*
        Old Li even come DOU not.have come
        'Old Li hasn't even COME.'

    b. *Tā   CHŪ   QÌ   dōu   chūbushànglai.*
        (s)he go.out breath DOU not.manage.to.breathe
        '(S)he didn't even manage to BREATHE.' (ad. Alleton 1972: 80)

    c. **Tā   lián LÈI   dōu   bù   lèi.*
        (s)he even tired DOU not tired
        intended: '(S)he's not even TIRED.' (Paris 1995: 174)

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[18] Stative verbs in Mandarin comprise most words that are categorized as adjectives in English and other European languages. In Chinese, these words clearly constitute a sub-class among verbs. Distributionally, they mainly differ from dynamic verbs in being able to be modified by adverbs of degree. See Paris (1995) for further discussion.

d. *Tā lián MÁNYÌ dōu bù mányì.
   (she) even content DOU notcontent
   intended: '(S)he's not even CONTENT.'

Verb-copying is a well-known phenomenon in Mandarin, and I will not comment on it any further here except for noting that it is, of course, the verbal instance preceding *dōu* which is in focus and which bears stress; the copy behind *dōu* more or less only serves the purpose not to leave the sequence of *dōu* and the negation word stranded.

Given that in the case of parametric *dōu*, not just nominals, but also verbal constituents may move to a position preceding *dōu*, it is a puzzling fact that verbs denoting dynamic processes may move, while verbs denoting comparatively time-stable concepts such as *lèi* '(be) tired' or *mányì* '(be) content' may not; after all, the concepts encoded by stative verbs clearly bear more ontological resemblance to nominal concepts than the concepts of dynamic verbs do. If we assume that the ability to move to a position preceding *dōu* is somehow governed by a single over-arching principle, we would not expect there to be an ontological gap between nominal borderline cases such as frequency complements on one side, and dynamic verbs on the other, such that those verbal concepts that are ontologically closest to nominal predicates are excluded from preposing. I will leave this puzzle for future research.

What about post-verbal elements that may not be preposed then, such as stative verbs or resultative endings? In Chinese conversations, situations do arise in which one would like to say things like *He wasn't even content with what he had, let alone happy* or *The two actors didn't just act together, they even acted together with utmost excellence*. In these contexts *shènzhì* 'even' may be used. Examples are given below.

(68) *Tā shènzhì bù MÁNYÌ, gèng bié shuō GĀOXING le.*
     (s)he even not content let.alone happy PRT
     '(S)he's not even CONTENT, let alone HAPPY.'

(69) [The two actors didn't just act together...]
     [...] *tāmen shènzhí pèihé-de JÍ-MIÀO!* (ad. hx: 296)
            they even cooperate-CSC extremely-excellent
     '...they even acted together WITH UTMOST EXCELLENCE!'

Shènzhì is thus akin to *zhǐ* 'only', a focus particle preceding predicates which must have its focus to its right (see section 1.1).

In this sub-section we have investigated several kinds of elements canonically occurring behind the structural position of *dōu*. Most of these elements may move to a position preceding *dōu*, thereby allowing them to

interact with *dōu*. What we have not found were cases in which an element must stay in situ and may still interact with parametric *dōu*.

B. Yě-*foci must precede parametric* yě

If we only look at facts of relative position, and gloss over some differences to be noted in section 3.3.3 below, foci in parametric *yě*-assertions and foci in parametric *dōu*-sentences behave alike: *Lián/Even*-foci must precede *yě*, and if the respective syntactic categories are canonically used in a post-*yě* position, they must move to a position preceding *yě*. In ch. 4 Krifka's concept of emphatic assertions will be put to use to determine how the sentence meanings of parametric *yě*-sentences can be derived and in what way they differ from the sentence meanings of non-emphatic and non-parametric *yě*-sentences. Here, it will do to know that emphatic assertions combined with parametric *yě* yield meanings that are indistinguishable from the meanings that one would get if parametric *dōu* were used instead of *yě*. In this sub-section I will simply repeat most examples from the immediately preceding sub-section on the relative position of parametric *dōu* and its interacting foci, but *yě* will be substituted for *dōu*. In contradistinction to the ungrammatical b-sentences of (62) through (65), *lián* has not been put in parentheses to prevent the possible and grammatical reading in which *yě* is interpreted as focusing; these cases have been sorted out in section 2.4.3. I will again take up the issue of the delimitation of use types in section 3.5 below.

(70) Preposed objects (cf. (62)):
     a. *Xiǎo Wáng (lián) JĪ-RÒU yě bù chī.*
        Little Wang even chicken-meat YE not eat
        'Little Wang doesn't even eat CHICKEN.'
     b. **Xiǎo Wáng yě bù chī lián JĪ-RÒU.*
        Little Wang YE not eat even chicken-meat
        intended: 'Little Wang doesn't even eat CHICKEN.'
     c. *Xiǎo Wáng bù chī jī-ròu.*
        Little Wang not eat chicken-meat
        'Little Wang doesn't eat chicken.'
     d. *Xiǎo Wáng jī-ròu bù chī.*
        LittleWang chicken-meat not eat.
        'Chicken, Little Wang doesn't eat that.'

(71) Negative polarity items/Measure phrases denoting (contextually) minimal quantities in object function (cf. (64)).
     a. *Lǎo Lǐ (lián) YĪ-JÙ HUÀ yě shuōbuchūlai.*
        Old Li even 1-CL:speech.unit speech YE not.be.able.to.speak
        'Old Li couldn't even say A WORD.'

b. *Lǎo Lǐ yě shuōbuchūlái lián YĪ-JÙ   HUÀ.
   Old Li YE not.be.able.to.speak even 1-CL:speech.unit speech
   intended: 'Old Li couldn't even say A WORD.'

c. Lǎo Lǐ   shuō-le   yī-jù   huà.
   Old Li speak-ASP 1-CL:speech.unit speech
   'Old Li said something.'

(72) Negative polarity items/Measure phrases denoting (contextually) minimal quantities as canonically post-verbal complements of frequency (cf. (65)):

a. Tā (lián) YĪ-CÌ   yě   méi   lái-guo.
   (s)he even 1-CL:time YE not.have come-ASP
   '(S)he hasn't even come ONCE!' (ad. Paris 1994: 249)

b. *Tā yě   méi   lái-guo lián YĪ-CÌ.
   (s)he YE not.have come-ASP even 1-CL:time
   intended: (S)he hasn't even come ONCE!'

c. Tā   lái-guo   yī-cì.
   (s)he come-ASP 1-CL:time
   '(S)he's been here once before.'

(73) Negative polarity items/Measure phrases denoting (contextually) minimal stretches of time as canonically postverbal complements of duration (cf. (65)):

a. Tā (lián) YĪ-HUÌR   yě   zuòbuzhù.
   (s)he even 1-CL:moment YE unable.to.sit.still
   '(S)he can't sit still for even A SECOND!'

b. *Tā yě   zuòbuzhù   lián YĪ-HUÌR.
   (s)he YE unable.to.sit.still even 1-CL:moment
   intended: '(S)he can't sit still for even A SECOND!'

c. Tā   zuò-zhù-le   yī-huìr   le.
   (s)he sit-still-ASP 1-CL:moment PRT
   '(S)he sat still for a moment.'

d. Tā (lián) YĪ-FĒN zhōng yě   méi   pǎo.
   (s)he even 1-CL:minute clock YE not.have run
   '(S)he hasn't run for even A MINUTE!'

e. *Tā yě   méi   pǎo lián YĪ-FĒN   ZHŌNG.
   (s)he YE not.have run even 1-CL:minute clock
   intended: '(S)he hasn't run for even A MINUTE.'

f. Tā   pǎo-le yī-fēn   zhōng le.
   (s)he run-ASP 1-CL:minute clock PRT
   '(S)he's run for a minute.'

The sentences in (74) show that the facts of verb-copying with parametric *yě* parallel those observed with parametric *dōu* (cf. (67)).

(74) a. Lǎo Lǐ   lián LÁI yě   méi   lái.
       Old Li even come YE not.have come
       'Old Li hasn't even COME.'

   b. Tā   CHŪ QÌ   yě   chūbushànglái.
      (s)he go.out breath YE not.manage.to.breathe
      '(S)he didn't even manage to BREATHE.' (ad. Alleton 1972: 80)

   c. *Tā lián LÈI yě   bu lèi.
      (s)he even tired YE not tired
      intended: '(S)he's not even TIRED.' (ad. Paris 1995: 174)

   d. *Tā lián MÁNYÌ   yě   bu mǎnyì.
      (she) even content YE not content
      intended: '(S)he's not even CONTENT.'

In this section we have started out from a statement of the regularities which hold with regard to the relative position of parametric *dōu* and *yě* and their interacting foci. This statement was parametrized according to whether *dōu* is used, or rather *yě*, whether we are dealing with emphatic assertions or not, and whether *lián*-words are used or not. All of these different settings have been reviewed.

3.3.2 Where parametric dōu or yě *must be used:* towards the generalization

The most important condition governing the mandatory use of *dōu* or *yě* is analogous to the ones discussed in the cases of parametric *cái* and parametric *jiù* in sections 3.1.1 and 3.2.1: Whenever a focus that must be interpreted as being of a particular kind precedes the structural position of *dōu* or *yě*, *dōu* or *yě* must be used. The precise semantic nature of the foci interacting with *dōu* and *yě* will only be dealt with in sections 4.3 and 4.4; for our present purposes, it will be sufficient to call most of these foci *even*-foci. The *even*-foci in examples such as (61a, a') or (61b, b') are simple cases: If *lián* 'even' is used, *dōu* or *yě* must be used.

(75) Obligatory *dōu* or *yě* (to be augmented and revised):
     Parametric *dōu* or *yě* is used if an *even*-focus precedes the structural position of *dōu* or *yě*.

Note that (75) also covers the cases discussed previously in which a canonically post-verbal constituent has moved to, or in which a verb has been copied to, a position preceding the structural position of *dōu* or *yě*. As with obligatory *cái* or *jiù*, the presence of a lexical element to mark the focus is not necessary, though, for the triggering of the obligatory use of *dōu* or *yě*. Just think of negative polarity items like *yī-jù huà* 'a

single utterance/a word', *yǒngyuǎn* 'ever', or *yīdiǎnr* 'a bit/the slightest bit' as illustrated in (76a-c).

(76) a. *Lǎo LǏ   YǏ-JÙ HUÀ   *(dōu/yě)   shuōbuchulai.*
Old Li   1-CL speech   YE/DOU   not.be.able.to.speak
'Old Li couldn't say A WORD.'

   b. *Jiù   shèhuì-de   kǔ,*
old   society-ATTR   hardship
*wǒ   YǑNGYUǍN *(dōu/yě)   bù   huì   wàngjì.*
I   ever   DOU/YE   not   will   forget
'NEVER EVER will I forget the sufferings in the old society.'

   c. *Zhè   YǏ-DIǍNR *(dōu/yě)   bù   kěxí.*
that   1-CL:bit   YE/DOU   not   a.pity
'That not a pity AT ALL.' (rp: 43)

   d. *Xiǎo Wáng   JĪ-RÒU   yě/dōu   bù   chī.*
Little Wang   chicken-meat   YE/DOU   not   eat
'Little Wang doesn't even eat CHICKEN.'

The fact that the foci in (76a-c) are interpreted as negative polarity items is sufficient to trigger the obligatory use of *dōu* or *yě* without any lexical focus marker being present. In a sense to become clear in ch. 4, negative polarity items and *lián*-foci are semantically very similar: Both types of expressions entail the truth of alternative sentences; therefore, we should be aware at this early point that it is not a surprise to find *lián*-foci patterning with polarity items. The case of (76d) is different: *Jīròu* 'chicken meat' in itself is not a lexicalized negative polarity item, but in this sentence it is interpreted like a kind of negative polarity item that is contextually determined: Most people like chicken meat, and if somebody does not eat chicken meat, this person will probably not like any other kind of meat (see section 4.3.3. on the theoretical foundations of negative polarity). If (76d) is used this way, the use of *dōu* or *yě* is in fact as obligatory as if *jīròu* 'chicken meat' were a lexicalized polarity item.

Our preliminary descriptive generalization should be adapted to cover the cases in (76).

(77) Obligatory *dōu* or *yě* (to be augmented and revised):
Parametric *dōu* or *yě* is used if an *even*-focus or a lexical or contextual negative polarity item in focus precedes the structural position of *dōu* and *yě*.

Apart from the cases discussed so far, the use of parametric *dōu* or *yě* is likewise obligatory if a *wh*-word/indefinite pronominal or a disjunctive predication is used in assertions expressing some special kind of univer-

sal quantification (cf. section 2.4.1.F, whence the examples in (78) and (79) have been taken and adapted).

(78) a. *SHÉI *(yě/dōu)   bù   huì   guài   nǐ.*
who   YE/DOU   not   will   blame   you
'NO-ONE will blame you.' (ad. rp: 7)

   b. *Tā   SHÉNME *(yě/dōu)   bù   shuō.*
(s)he what   YE/DOU   not   say
'(S)he doesn't say ANYTHING AT ALL.' (ad. Alleton 1972: 66)

   c. *Lǎo Zhāng   SHÉNME SHÍHOU *(yě/dōu)   méi   yǒu   gōngfu.*
Old Zhang   when   YE/DOU   not   have   time
'Old Zhang NEVER EVER has time.'

(79) *Bùguǎn   chéng   yǔ   bù   chéng,*
no.matter   succeed   and   not   succeed
*nǐ   *(yě/dōu)   yào   gěi   wǒ-ge   huíhuà.*
you   YE/DOU   must   give   I-CL   reply
'No matter whether you're successful or not, you must give me a reply.' (hx: 618)

With our understanding of the function of *dōu* and *yě* as it has been explicated so far, we are unable to smoothly integrate the obligatory uses of *dōu* or *yě* as witnessed by (78) and (79) into our preliminary generalization. It will be no earlier than after sections 4.3 and 4.4 that we have the results at hand that we need to subsume all of the cases of obligatory *dōu* or *yě* under a more elegant generalization. For the time being, the modified generalization in (80) is all we can state.

(80) Obligatory *dōu* or *yě*:
Parametric *dōu* or *yě* is used if an *even*-focus or a lexical or contextual negative polarity item in focus precedes the structural position of *dōu* and *yě*, or if a *wh*-word/indefinite pronominal or a disjunctive predication is used in assertions expressing some kind of universal quantification.

3.3.3 *Specific generalizations in limited contexts*

So far, the main emphasis in the treatment of the distribution of parametric *dōu* and *yě* has been on the parallels. We shall now turn to the differences.

The general problem is nicely illustrated by the sentences in (81) through (83). While it is often possible to exchange parametric *dōu* and *yě* without a perceivable change in meaning (example (81)), the same is dispreferred or outright impossible in other cases, even if the facts of relative focus position as discussed in the previous sections are not in the

way (examples (82) and (83)): All foci in the following examples precede *dōu* or *yĕ*, but still some versions of the sentences are ungrammatical or strongly dispreferred.

(81) *Tā*   *YĪ-DIĂNR*   *yĕ/dōu*   *bù*   *néng*   *dòng*.
      (s)he 1-CL:bit   YE/DOU   not   can   move
      '(S)he can't move AT ALL/even A BIT.' (ad. Alleton 1972: 63)

(82) *Tāmen*   *SHÉNME*   *dōu/*yĕ*   *găiliáng*.
      they   what   DOU/YE   change.for.the.better
      'They change EVERYTHING for the better.' (ad. Alleton 1972: 66)

(83) *Tā*   *jiùshì*   *yào*   *QÙ,*   *yĕ/???dōu*   *gāi*   *xiān jié-le*   *hūn*.
      (s)he even.if   must   go   YE/DOU   should first tie-ASP   marriage
      'Even if she GOES, she should marry first.' (ad. Alleton 1972: 78)

As far as I know, instances of such differences in acceptability are noted by some authors, but they have never been the subject of any systematic investigation. To shed some light on the relevant restrictions, I will first look at those contexts in which the use of *yĕ* is restricted; a second subsection will deal with the contexts in which the use of *dōu* is subject to special restrictions.

A. Restrictions on the use of *yĕ*

Folklore in Chinese linguistics has it that in sentences involving some kind of universal quantification expressed by a sequence of a *wh*-word/indefinite pronominal and *dōu/yĕ*, *yĕ* should be used in negated contexts, and *dōu* otherwise. Sentence (82), for instance, perfectly fits in with this rule. Alleton (1972: 80f) critically reviews the rule and comes to the conclusion that a different story has to be told because counter-examples as in (84) may easily be found.

(84) a. *Zhè-dào tí*   *wúlùn*   *zěnyàng nán,*
         this-CL question no.matter how   difficult
         wŏ   *yĕ*   *yào*   *gōngxià tā*.
         I   YE   want   conquer it
         'No matter how difficult this question is, I want to solve it.'
         (cf. Eifring 1995: 170)

      b. *Nĭmen*   *shéi*   *dōu*   *bù*   *yào*   *líkāi*   *wŏ*.
         you   who   DOU   not   must   leave   I
         'None of you may desert me.' (rp: 19)

Both sentences plainly run against the above rule, because *yĕ* is not followed by a negation word in (84a), but *dōu* in (84b) is. Admittedly, the large majority of my data confirm that *yĕ* and negation words are a good

match in universal *wh*-word sentences, whereas for *dōu* I am unable to confirm a preference for affirmative contexts.

If one investigates the contexts in which *yĕ* may occur together with *wh*-words/indefinite pronominals to express some kind of universal quantification, and if one contrasts them with contexts in which *yĕ* must not be used, it turns out that negation words and modal verbs license *yĕ*. A survey of examples with different negation words and modal verbs is given in (85) and (86).

(85) a. *Wŏmen*   *shénme*   *dĭxì*   *yĕ*   **(bù)*   *zhīdao!*
         we   what   exact.detail YE   not   know
         'We don't know any exact detail!' (ad. rp: 28)

      b. *Zhèxiē-ge*   *huàirén*   *zài*   *zĕnme*   *jiăohuá*
         these-CL   bandits   again   how   sly
         yĕ   **(méi)*   *yŏu*   *bànfă*   *dĭlài*   *le*.
         YE   not   have   method   deny   PRT
         'No matter how sly these bandits may be, they won't have a chance to deny what they did.' (ad. rp: 5)

(86) a. *Wŏ shénme-yàng-de*   *shū*   *yĕ*   **(huì/néng/nénggòu)*   *zhăodào*.
         I what-kind-ATTR   book   YE   will/may/can   find
         'I will/may/can find any kind of book.'

      b. *Wŏ shénme-yàng-de*   *shū*   *yĕ*   **(dĕi/yīnggāi/yào/xiăng)*   *kàn*.
         I what-kind-ATTR   book   YE   must/should/must/want   read
         'We must/should/want to read any kind of book.'

All of the sentences in (85) and (86) are ungrammatical without the negation markers or the modal verbs. The only semantic concept to cover these cases that I know of is the notion of nonveridicality.[19] Veridicality was introduced into the linguistics literature by Montague (1969), and Zwarts (1986, 1995) and Giannakidou (1997) make use of this and related notions to develop their theories of polarity licensing in Dutch, Modern Greek, and other languages. Definitions of veridicality and averidicality taken from Giannakidou (1997) are quoted in (87).

(87) Definition: Let *Op* be a monadic sentential operator. The following statements hold:
      a. *Op* is veridical just in case *Op p → p* is logically valid. Otherwise, *Op* is nonveridical.

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[19] The idea that the reversal of the monotonicity behaviour under negation plays a role here is tempting, but it cannot be true: Modals as in (86) have no influence on the monotonicity behaviour of the terms involved in the quantificational structure, and still grammaticality varies with their presence or absence.

b. A nonveridical operator *Op* is averidical just in case
   Op p → ¬ *p* is logically valid.

A nonveridical operator is thus defined as in (87c).

(87) c. *Op* is nonveridical just in case ¬ (*Op p* → *p*) is logically
   valid.

Veridicality is defined here as a property of operators with sentential scope. This property tells us whether the truth of an assertion with a wide-scope operator allows us to conclude anything about the truth or falsity of the embedded proposition. In the sentence *I moved to Berlin in 1997*, the temporal expression *in 1997* is veridical because it is licit to conclude from the assertion *I moved to Berlin in 1997* that I moved to Berlin. In contrast to this, *may* in *You may swim here* is non-veridical because from the fact that the addressee may swim somewhere it is not possible to conclude that the addressee is swimming. It is important to see that nonveridicality allows for the possibility that the embedded proposition is true, but this is not entailed.

Averidicality is special case of nonveridicality. Averidical operators are those sentential operators from which one can conclude that the complement of the embedded proposition is true. Negation is an averidical operator: It is possible to conclude from *John doesn't sleep* that it is false that John is sleeping. Note again that this is but a special case of non-veridicality because it also holds that the sentence *John doesn't sleep* does not entail that John is sleeping. Applied to the matter of what licenses the use of parametric *yě* in universal *wh*-word-sentences, we may state a generalization as in (88).

(88) *Nonveridicality and the grammaticality of sentences with* wh-*word...* yě-*strings:*
   In assertions involving *wh*-words/indefinite pronominals conveying the meaning of (some kind of) universal quantification over the domain of the *wh*-word/indefinite pronominal, parametric *yě* may only be used in nonveridical contexts.

This generalization covers all the examples in (85) and (86). From (85a) it does not follow that the subject referents know any exact detail; from (85b) it does not follow that the bandits have a chance to deny; from no variant of (86a) is it licit to conclude that the subject referents will find

all books for sure; (86b), finally, does not entail in any of its versions that the subject referents read all kinds of books.[20]

Let us recall at this point that the generalization in (88) does not just state something about contexts in which *yě* may be used. It is also a statement about cases in which *dōu* or *yě* must be used: All sentences in (85) and (86) are ungrammatical if *yě* is dropped and *dōu* is not used in its stead.

Recall that the nonveridicality restriction of the use of parametric *yě* only holds for those special cases in which *wh*-words/indefinite pronominals or disjunctions interact with *yě*. In the simple contexts of negative polarity items and *even*-words as treated in section 3.3.1, *yě* and *dōu* interchange freely. In other words: In the *wh*-word cases and in the disjunction cases nonveridicality is a necessary condition for the use of parametric *yě*. But is it also a sufficient condition? (89) and (90) provide evidence to the contrary: Even though non-veridical operators are used, *dōu* must be used, and the use of *yě* is not accepted by my consultants.

(89) *Tā   shuō shénme wǒ   dōu/*yě   huì   dāying   de.*
     (s)he say   what   I   DOU/YE   will   agree   PRT
     'Whatever he says, I'll agree to it.' (Eifring 1995: 147)

(90) *Bùguǎn   cóng shénme dìfāng dōu/*yě kěyǐ   shàng-qu.*
     no.matter from what   place   DOU/YE   can   ascend-go
     'You can ascend from any direction.' (Eifring 1995: 170)

I have not succeeded in making good sense of these differences in grammaticality. However, I will return to these cases towards the end of section 4.3.4.

B. Restrictions on the use of dōu

In (83) above we have already seen an example in which *dōu* is strongly dispreferred, while the use of *yě* is possible and, in fact, obligatory; it is repeated in (91).

(91) *Tā   jiùshì   yào   QÙ,yě/???dōu gāi   xiān jié-le   hūn.*
     (s)he even.if must go YE/DOU   should first tie-ASP marriage
     'Even if she GOES, she should marry first.' (ad. Alleton 1972: 78)

More examples of the same kind are listed in (92).

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[20] Note that deontic modals such as *děi* 'must' and *yīnggāi* 'should' in (86) are classified as non-veridical here although they are analyzed as being related to necessity operators. Logical necessity is of course veridical, but deontic necessity as expressed by *yīnggāi* 'should' is not. From the fact that my little nephew has to do his homework, I am not allowed to conclude that he is actually doing his homework. On this point see also the discussion in Kratzer (1991a) and in Giannakidou (1997: 112ff).

(92) a. *Jiùsuàn tā BÙ zài nàr,*
even.if (s)he not at there
nǐ yě/???dōu yīnggāi zài qù yī-xià.
you YE/DOU should again go 1-CL:time
'Even if (s)he's NOT there, you should still go there once
more.' (cf. Alleton 1972: 111)

b. *Nǐ jiùshì YUÀNYI xīshēng nǐ-de shíjiān,*
you even.if willing sacrifice you-ATTR time
wǒ yě/???dōu bù néng jiēshòu.
I YE/DOU not can accept
'Even if you're WILLING to sacrifice your time, I can't accept
it.'

c. *Jíshǐ TĀ qù, nǐ yě/*dōu qù ma?*
even.if (s)he go you YE/DOU go PRT
'Will you go even if HE's going?' (cf. Eifring 1995: 43)

d. *Suīrán méi xià yǔ, tā yě/*dōu dài-zhe sǎn.*
although not.have fall rain (s)he YE/DOU take-ASP umbrella
'Even though it wasn't raining (s)he took along an umbrella.'
(cf. hx: 619)

(92a) and (92b), just like (91), have focusing subordinators which have
the morpheme/syllable *jiù* as a part. Grammars and my consultants relia-
bly refuse the co-occurrence of a *jiù*-subordinator and parametric *dōu*. In
section 4.3.5 this fact will be made to follow from the focus semantics
going along with the use of parametric *yě*. (92c) and (92d) are trickier,
and grammaticality judgements with such non-*jiù*-concessives and con-
cessive conditionals tend to be a bit shaky. On different occasions, my
consultants' judgements have been considerably less consistent than in
other areas. Sentence (93a) with *dōu*, for instance, has received different
kinds of grammaticality judgements ranging from 'okay, *yě* better' to
'ungrammatical with *dōu*'. On the other hand, (93b) is regularly accepted
with *dōu*.

(93) a. *Tā jíshǐ XIÀ YǓ yě/??dōu huì lái.*
(s)he even.if fall rain YE/DOU will come
'(S)he'll come even if IT RAINS.' (cf. Eifring 1995: 32)

b. *Jíshǐ GUÓWÁNG LÁI wǒ yě/dōu bù huì qù.*
even.if king come I YE/DOU not will go
'Even if THE KING COMES I won't go.'

I have not been able to determine the factors that influence my consult-
ants' varying intuitions.

Apart from the shaky cases just discussed, we find two kinds of sen-
tences in which *yě* is not used in concessive sentences. In the first kind,
hái(shi) 'still', or some other marginal member of the paradigm to
which *cái, jiù, dōu* and *yě* belong is used. This amounts to saying that in
these sentences, the syntactic position of *yě* must be filled by some filler
of the same category which is semantically adequate. This is illustrated
in (94), where *háishi* 'still' occupies *yě*'s position. More on such cases
will be said in section 4.5.

(94) *Jíshǐ wǒ míngbái zhè-diǎn, wǒ *(háishi)*
although I understand this-CL:bit I still
bǎ ěrhuán mǎixiàlái le. (cf. Eifring 1995: 79)
BA earrings buy PRT
'Even though I understood this, I still bought the earrings.'

All the examples in this sub-section in which *yě* could be used were
sentences with nonveridical operators with sentential scope. I have not
been able to find a concessive (conditional) sentence in which such an
operator was not present.

Since the results of this sub-section are a bit uncertain, I will refrain
from stating a descriptive generalization as in the preceding sub-
sections.

3.3.4 Triggers and constraints in contrast: parametric *dōu* vs. parametric *yě*

Figure 3.1 recapitulates the findings of sections 3.3.1 through 3.3.3. The
set labelled PARAMETRIC encompasses all those sentences in which a
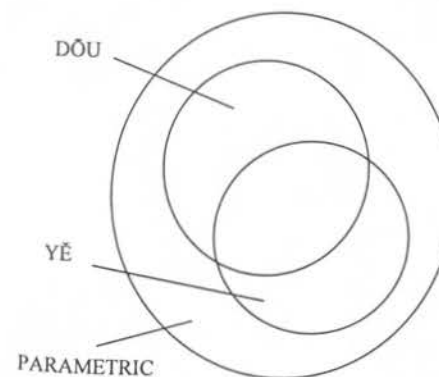parametric particle occurs. The DŌU set comprises all those sentences in
which the use of parametric
dōu is grammatical, the YĚ set
comprises all those sentences
in which the use of parametric
yě is grammatical. The inter-
section of DŌU and YĚ con-
forms to the cases covered by
the generalization in (77) and
in sub-section 3.3.3.A: *Dōu*
and *yě* are freely interchange-
able if they interact with an
even-focus or a focused nega-
tive polarity item, or if they
interact with a *wh*-word/an in-
definite pronominal, or with a

Figure 3.1: Distribution of sentences in which either parametric dōu *or parametric* yě *must be used*

disjunction within the scope of a nonveridical operator. The difference of
DŌU and YĚ (DŌU-YĚ) comprises all those sentences in which parametric
yě may not be used because no nonveridical operator is present. The dif-
ference of YĚ and DŌU (YĚ-DŌU) amounts to all those sentences in which
concessivity or concessive conditionality is marked by a *jiù*-subordinator
(see section 3.3.3.B). The problematic cases assembled in (89), (90),
(92c/d) and (93) have been neglected in Figure 3.1.

3.4   THE CATEGORIZATION PROBLEM:
CÁI, JIÙ, DŌU AND *YĚ* AS AGREEMENT PARTICLES

The task of determining the part of speech to which parametric *cái*, *jiù*,
dōu and *yě* belong is a difficult one. It is obvious that these words are
neither verbs, nor nouns, nor adjectives, and they are not prepositions,
either. What we are left with are those classes whose boundaries are no-
torious for being difficult to define.

In my discussion of the issue I will first review the categorial assign-
ments that have been proposed in the literature of the past three decades,
and I will give reasons why these assignments should be refuted. I will go
on to demonstrate why I think that it is justified to analyze the general
function of parametric *cái*, *jiù*, *dōu* and *yě* as morphosyntactic. It goes
without saying that some explanation is needed to apply terms of mor-
phosyntax to a language that is known for its scarce or absent (inflec-
tional) morphology, and to establish information-structural categories as
structures that may trigger morphosyntactic expressions. Supporting
evidence is provided by the discussion of phenomena in other languages
that serve to make the proposed Mandarin system appear less unlikely.

3.4.1   *Previous categorial assignments*

The following terms may be encountered in the literature when it comes
to determining the part of speech and the overall function of parametric
cái, *jiù*, *dōu* or *yě*: 'Backward-linking adverb', 'backward-linking con-
nective', 'quasi-correlative', '(focus) adverb', 'focus particle', or 'head
of a functional phrase'.

The term 'adverb' is the one that has the longest tradition, and also the
one that can be discarded most easily for the reason of being more or less
vacuous. Alleton (1972) chooses to categorize *cái*, *jiù*, *dōu* and *yě* as
adverbs, but she is well aware that this is mostly a definition *ex negativo*:
In her grammatical framework, everything that is not a predicate (i.e. a
verb) or (part of) a complement thereof is an adverbial; among these, the
adverbs proper may be distinguished (Alleton 1972: 22). Our elements

belong to her sub-class of markers of specialized relations ('marques de
relations spécialisées'). Other researchers who use the term 'adverb'
include Li & Thompson (1981), Paris (1981, 1985) (with some reserva-
tion) and, most recently, Zhang (1997). Adverbs have always been the
dustbin categories in parts-of-speech assignments in the history of lin-
guistics. This usually makes the set of elements for which the label 'ad-
verb' has been proposed a very unwieldy category. The only thing that
one can conclude for sure from this characterization is that we are not
dealing with nouns, verbs, adjectives, prepositions, and probably not with
articles, either. The adverb solution starts to run into serious trouble
when we recall the facts of obligatoriness that have been observed at so
many places in the preceding sections: In many contexts *cái*, *jiù*, *dōu* or
yě may not be left out. This is unheard-of for an alleged adverb, and I
take this fact as sufficient evidence to give up the whole idea of assigning
the investigated words to the category of adverbs.

Similarly, the term 'backward-linking (connective)', which is used by
Li & Thompson (1981) and by Eifring (1995), is not a real help. What it
does is give a name to the intuition that parametric *cái*, *jiù*, *dōu* and *yě*
(virtually) always relate back to some prior element. This is also what
Alleton (1972: 39f) has in mind when she speaks of quasi-correlatives,
because the correlation is said to hold among the preceding information-
structurally distinguished category, and *cái*, *jiù*, *dōu* or *yě*. The problem
with 'backward-linkage' is that this term is highly non-specific. To give
some content to it one might assume an anaphoric link between the pre-
ceding trigger elements and *cái*, *jiù*, *dōu* and *yě*. This would pave the way
for two more specific hypotheses: Either parametric *cái*, *jiù*, *dōu* and *yě*
resemble resumptive (pronominal) elements such as *therefore*, *then* and
the like, or they are like subordinating conjunctions such as *when*, *since*,
because or *although*. The resumptive-pronominal option is tempting,
because in English translations of pertinent Mandarin sentences these
words are used very often. There are two problems with this hypothesis.
First, none of *cái*, *jiù*, *dōu* or *yě* is of a deictic nature the way Indoeuro-
pean resumptive pronominals are. This may not be a watertight argu-
ment, but it is suggestive in the light of what we know about the
historical development of anaphoric elements. Moreover, resumptive
pronominals of adverbial relations as such are not obligatory, even
though it may be required that the syntactic position they occur in should
be filled by some element (cf. forefield uses of resumptive deictic connec-
tives such as *deswegen* 'therefore' in German and analogous phenomena
in other Germanic V2-languages). The final blow for the resumptive
hypothesis comes from the fact that undoubtedly anaphoric or deictic

elements may be used in relevant sentences, and they are the ones to be translated by resumptive elements such that *cái, jiù, dōu* or *yě* are left dangling without a plausible equivalent in the English translations. Examples for *cái, jiù* and *yě* are given in (95); the resumptive elements have been underlined.[21]

(95) a. *Jiùshi   yīnwèi   tāmen   Huáng   jiā   bù   bàibài,*
          simply   because   they   Huang   family   not   pray
          suǒyǐ   tāmen jiā   érzi cái   huì   chū   chēhuò.
          therefore they   family son CAI   could occur car.accident
          'It's only because the Huangs haven't joined the religious ceremony that their son could have this accident.' (rp: 34)

      b. *Yīnwèi   dié   yèzi   bù   yòng   dòng   nǎojīn,*
          because   fold   sheet   not   need   move   brain
          suǒyǐ   jiù   zài   nǎozi-lǐ zǒu   qí.
          therefore JIU   at   brain-in go   chess
          'Since you don't need to use your brain to fold sheets of paper, I make chess moves in my brain.' (hx: 673)

      c. *Suīshuō   bù   néng   fā cái,*
          although   not   can   become.rich
          què   yě   mǎimai   xìnglóng.
          nevertheless YE   business   flourish
          'Even though it won't make me rich, my business is getting along fine.' (hx: 531)

If the underlined words in (95) have a resumptive anaphoric function, the same function is not available anymore for parametric *cái, jiù, dōu* and *yě*.[22]

Our second rough hypothesis to explicate what 'connective' may be taken to mean has been to equate the function of *cái, jiù, dōu* and *yě* with subordinating conjunctions. The problem here is that the words under scrutiny are not constituents of the subordinate clauses or phrases, unless one would assume a very rich apparatus in syntax; they are, quite to the contrary, constituents of the embedding clauses. I am not aware of any empirical evidence to support a rich syntactic derivation with an underlying structure in which the subordinate clause and the alleged "connector" start out as a single constituent.

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[21] It is difficult to find a good pertinent example for parametric *dōu*. I do not know why this is so.
[22] For a brief discussion of *suǒyǐ*'s lexicalization process leading to its present-day use as a resumptive element, cf. Bisang (1992: 205f).

A general difficulty for any approach which aims at assigning *cái, jiù, dōu* and *yě* to some class of connectives is the indisputable and very general sensitivity of these elements to information-structural categories: Large portions of this study are devoted to demonstrating that generalizations regarding parametric *cái, jiù, dōu* and *yě* must necessarily make reference to notions such as 'focus' or 'C-topic'. It is not a general property of conjunction-like elements to restrict their range of application to certain information-structural categories – although this may, with certain words, actually be the case. The difference here is that parametric *cái, jiù, dōu* and *yě* are all information-structurally sensitive.

A final argument against either version of the connector analysis may be derived from the fact that *cái, jiù, dōu,* and *yě* are insensitive to whether the "connected element" is a core argument of the predication or some peripheral element, be it a clause, or just a non-propositional adverb(ial). It is not a property of core arguments or non-propositional adverb(ial)s to require "connecting" words to be licensed in a sentence. For this reason, connector analyses, whatever their specific shape may be in the end, are not just too non-specific, they are clearly inadequate.

Terms like 'focus particle' or 'focusing adverb' as used in Biq's (1984, 1988) and Lai's (1995, 1996, 1999) studies have the advantage of emphasizing the information-structural import of parametric *cái, jiù, dōu* and *yě*. Nonetheless, they are apt to evoke false ideas about analogies with elements in other languages. Prototypical focus particles in English include *only* or *even*, but *only* and *even* have properties that are very different from those of parametric *cái, jiù, dōu* or *yě*. First, a grammatical sentence in which *only* or *even* is dropped may become infelicitous, but it will never become ungrammatical.[23] We have seen abundant evidence that in Mandarin precisely this is often the case: Sentences tend to require the use of *cái, jiù, dōu* or *yě*. Second, Mandarin does possess focus-sensitive expressions which behave like English focus particles, and these expressions are used alongside with *cái, jiù, dōu* and *yě*. Four illustrative sentences are listed in (96). Again, the words under discussion have been underlined.

(96) a. *Zhǐyǒu   ZHÈ-zhǒng   shū   Lǎo Wáng   cái   mǎi-guo.*
          only   this-CL:kind book   Old Wang   CAI   buy-ASP
          'Old Wang has bought only THIS kind of book before.'

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[23] This generalization does not hold for *only-if*-conditionals if the subordinate clause precedes the matrix clause: [*(Only)] *if it rains (does) she take her umbrella along*. The inversion rule at work here is irrelevant to our concern, because its application is conditioned by inherently negative constructions, and not by all focusing phenomena.

b. <u>*Zhǐ-yào*</u>   *NǏ*   *LÁI,*   *wǒ*   *jiù*   *qù.*
   only-must   you   come I   JIU   go
   'If YOU COME, I'll go.'

c. <u>*Lián*</u>   *TĀ*   *dōu*   *huì*   *lái.*
   even   (s)he   DOU   will   come
   'Even (S)HE will come.'

d. <u>*Jíshǐ*</u>   *NǏ*   *LÁI,*   *wǒ*   *yě*   *bù*   *huì*   *qù.*
   even.if   you   come I   YE   not   will   go
   'Even if YOU COME, I will not go.'

In these sentences, *zhǐyǒu*, *zhǐyào*, *lián* and *jíshǐ* are good candidates to be included among those focus-sensitive expressions that are really akin to English *only (if)* and *even (if)*: They stand close by their foci – linearly and configurationally –, and their meanings are – with the exception of *zhǐyào*, which is treated in some detail in section 5.1– easily stated in a fashion that resembles the English case. If this is so, *cái, jiù, dōu* and *yě* must belong to a different class of words.

In the most recent generative syntactic tradition, it has become customary to treat parametric *cái, jiù, dōu* or *yě* as functional heads (cf. Gao 1994, Shyu 1995 or parts of the data covered in Lin 1996). Within Chomsky's Minimalist Program (Chomsky 1995) this is to say that *cái, jiù, dōu* and *yě* head a functional phrase, i.e. a phrase which, without meaning anything by itself, makes it possible for other elements that are specified for matching features to occur in a given sentence. Without going into the details here, we may say that functional phrases constitute the backbone of the syntactic organization of sentences. Within this theory features need to be "checked", i.e. some other element which comes pre-specified for the same feature must move to the specifier position of the X-bar-structure that *cái, jiù, dōu* and *yě* project, and then the head and the specifier are checked for identical feature settings. In our context this means that (a constituent containing) a focus and parametric *cái, jiù, dōu* or *yě* must, at some point in the derivation, have been constituents of a single functional phrase. More on the syntactic furtherings of this kind of analysis was said in the discussion on *cái* at the end of section 3.1.2.A. Despite the problems that these analyses may have if they are confronted with certain data, they have a big advantage as soon as we compare them with the other category assignments discussed so far. By grouping words like *cái, jiù, dōu* or *yě* among the functional heads, the obligatoriness discussion may be put on a more solid basis: Since the syntactic features of the focus constituents and the functional heads need to enter into a checking relation, the obligatory presence of both in so many sentences can be explained. Nonetheless, I think that the recent syntactic analyses

are somewhat precipitate. What they do is propose a highly specific syntactic implementation for a problem whose general nature is but poorly understood. What do we know if we know that *cái, jiù, dōu* and *yě* are functional heads? We know that – varying with the individual theoretical stance of the researcher – they belong in the same general class as determiners, tense or aspect morphemes, or heads of phrases integrating thematic relations into the structure. This is about as heterogeneous a collection of elements as the one usually covered by the term 'adverb'. For a more general view of Mandarin grammar, this only allows us to conclude that we are somehow dealing with elements belonging to the core of Mandarin grammar. The same result has been arrived at in section 2.5. There, I have discussed in what respect it is legitimate to treat parametric *cái, jiù, dōu* and *yě* as independent linguistic signs that may be set apart from the other uses of each character. The obligatoriness argument was important in the course of that justification: If, in the presence of some other element, speakers are forced to choose from a paradigm of functional elements, then we are dealing with a grammatical(ized) phenomenon. The major consequences of the grammaticalization argument, and of the functional-phrase analyses thus coincide.

3.4.2 *Parametric particles as focus-background agreement markers*

To develop my own proposal for a more specific and less theory-dependent categorial hedging of parametric *cái, jiù, dōu* and *yě*, I would like to start out from a hypothetical case.

Suppose you investigate the occurrence restrictions of a certain set of verbal endings in some language AM. What you find is that if foci of specific kinds – and you are able to characterize these kinds satisfactorily – precede the verb in AM, then one of these verbal endings must be used. In the end you have as many semantically and formally justified focus classes as there are members in the set of verbal endings. What kind of analysis would you develop for this state of affairs?

An unorthodox, but nonetheless reasonable idea would be the following: AM has focus-background agreement. Since the locus of agreement on the clause level is the verb, the locus of focus-background agreement is likewise on the verb. Depending on what kind of focus the focus is marked for, the agreement marker on the verb varies. (Note that to say that AM has a (semantic) scope-marking system will not be quite sufficient, because what determines the form of the alleged scope-marker concerns the type of focus, and not the type of scope.)

Needless to say, the facts of this thought experiment have been taken from Mandarin, or at least from a language that is identical to Mandarin with regard to our research topic, except that it has a richer agglutinating morphology than Mandarin: Our hypothetical Agglutinating Mandarin expresses by way of verbal endings those things that are expressed by the words *cái, jiù, dōu* and *yě* in isolating Mandarin. But what is this story-telling good for? Mandarin is not an agglutinating language, and information-structural categories are not among the candidates one would think of if asked for typical verbal agreement categories. What I would like to show is that, in spite of the truth of these two objections, an analysis of parametric *cái, jiù, dōu* and *yě* in terms of phrase-level agreement is viable, and that neither of the two objections that have been raised are as solid as they may seem.[24]

Let us first turn to the exotic status of information-structural categories receiving verbal agreement marking. In fact, some languages are attested in which information-structural categories trigger verbal agreement (see section 6.2.3). One of these languages is Yukagir, a Paleosiberian language spoken along the Kolyma river which has been claimed to be a Uralic language, but no consensus on this matter has been arrived at so far.[25] All researchers who have worked on this language seem to agree on the currently relevant point (cf. Collinder 1940, Harms 1977, Krejnovič 1982 or, seemingly detached from this tradition, Comrie 1981: 258ff). In Yukagir past tense sentences, verbal inflection varies with the category of the element in focus. Subject focus with intransitive verbs triggers the verbal ending -*l*, and except for a plural marker -*ŋu-* in the 3rd person plural, no other agreement markers are used such that -*l* is usually the only ending in these cases. Object focus triggers verbal endings amalgamating information-structural features with person and number features. Subject focus with transitive verbs receives verbal zero-marking. Verb focus triggers the prefixing of *mer-* on the verb stem. The focused nominals themselves are marked by -*leŋ* or -*ek*, with the exception of cases of subject focus with intransitive verbs. In such cases neither the nominal nor the verb display any overt agreement marking. (97) presents five examples, one each for the following types: a) intransitive verb and subject focus; b) intransitive verb and verb focus; c) transitive verb and subject focus; d) transitive verb and object focus; e) transitive verb and verb focus. All examples have been taken from Comrie (1981: 260f).

(97) Yukagir
    a. ['Who ran away?']
       ile-leŋ   *kötege-l*[26]
       deer-FOC   run.away-SUBJ.FOC/ITR
       'THE DEER ran away.'
    b. ['What did the deer do?']
       ileŋ   *me-kötege-j*
       deer   VERB.FOC-run.away-3S
       'The deer RAN AWAY.'
    c. ['Who shot (the deer)?']
       met   *ai*
       I   shoot
       'I shot.'
    d. ['What did you shoot?']
       met *ile-leŋ*   *ai-meŋ*
       I   deer-FOC   shoot-OBJ.FOC/1S
       'I shot THE DEER.'
    e. ['What did you do to the deer?']
       met *ile* *mer-ai-ŋ*
       I   deer VERB.FOC-shoot-1S
       'I SHOT the deer.'

This system is, of course, highly peculiar, and it is difficult to find any direct parallels with the Mandarin system. Specifically, Yukagir verbal agreement varies with the syntactic function and the categorial status of the focus constituents: Subject foci and object foci of transitive verbs are treated differently, and verbs in focus are set apart from nominals in focus. In the Mandarin system analyzed here, the verb must either not be focused in the relevant construction (the case of *cái* and *jiù*), or it may, by way of verb-copying, partake in the system of focus-preposing, but then it patterns with non-verbal constituents in focus (the case of *dōu* and *yě*; cf. examples (67) and (74) of section 3.3.1.A and C). What the focus marking within the verbal complex depends on is not the syntactic function of the nominals in focus, but rather the quantificational type of the focus (i.e. whether an *only*-focus, an *even*-focus, etc. is related to; see the following chapter for details). Still, there is also a general parallel: Both in Yukagir and in Mandarin, categories that must be analyzed in terms of

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[24] For an intuition in this vein cf. Tsai (1994: 27).

[25] I am indebted to Dejan Matić for directing my attention towards the Yukagir case.

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[26] I take -*l* to mark subject focus with intransitive verbs, and this is also the prevailing opinion in the literature. Comrie glosses it as a fused person-number ending which has precisely one phonetic shape for six different person-number combinations. This does not appear to model the way Yukagir verbal agreement categories are organized.

focus-background structure trigger the obligatory use of specific elements in the verbal inflectional system or in a position adjacent to the verbal complex.

What we have now is a parallel concerning the grammaticalized expression of some information-structural category: Agreement that is information-structurally governed does occur in natural language. What remains is our second objection: Parametric *cái, jiù, dōu* and *yě* may well be sister constituents of some higher verbal projection, but this is not the same as an inflectional category: Verbal inflection should at least agglutinate. This is exactly what Cantonese *-dak* 'only' does according to Tang's (2002) analysis. Tang proposes to analyze *-dak* as a verbal suffix: Although it is compatible with all kinds of sentential aspects (states, activities, achievements, accomplishments), it must not be combined with any verbal aspect suffix; cf. his sentence in (98).

(98) Cantonese
    Keoi se(*-zo) -dak (*-zo)   LOENG-PIN MAN.
    he   write-ASP-only -ASP   2-CL   article
    'He wrote only TWO ARTICLES.'

Even if a thorough analysis of the facts revealed that *-dak* – as well as the aspect markers – should be assigned to the class of clitics, one possible conclusion to be drawn from (98) is that *-dak* occupies a syntactic slot usually available for verbal aspect categories in Cantonese. Moreover, it has repeatedly been claimed that many (Chinese) clitics are really phrasal affixes (Klavans 1983, 1985, Anderson 1992, Liu 1995). Another interesting property of *-dak* is that it favours monosyllabic verb stems. This fact falls into place when we recall that Chinese dialects in general have strong prosodic constraints at work which often prescribe or strongly favour disyllabic word forms: If verb forms are required to be maximally bisyllabic, and if verbs preceding *-dak* must be monosyllabic, *-dak* may justifiedly be argued to be part of a disyllabic phonological word.[27] Again, Cantonese and Mandarin do differ: Cantonese *-dak* is an *only*-word phonologically associated with verbs; however, it does not merely reflect an otherwise established focus interpretation, it actually estab-

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[27] Although this is not immediately relevant here, it may be interesting to note that *-dak* is used in virtually all those contexts in which analogous Mandarin sentences would have *cái* and a post-verbal focus. It does not seem too far-fetched to reduce the difference among Mandarin and Cantonese in this respect to different ranges of verb movement (if one aims at a syntactic analysis at all): Cantonese verbs in *dak*-sentences climb so high as to reach the position immediately preceding *-dak*, whereas Mandarin verbs stay below *cái (jiù, dōu, yě)* in the tree.

lishes it. The interesting Mandarin cases were, for instance, those in which an independently *only*-marked focus (e.g. by the pre-focus use of *zhǐyǒu* 'only') triggered the use of *cái* on the left edge of the predicate. What Cantonese does serve to show is that elements relevant to information-structural components of meaning may be involved in what Anderson (1992) has – somewhat paradoxically – come to call 'the morphology of phrases' (if *-dak* is a clitic), or that such elements may even partake in word-formation or inflection (if *-dak* is a real suffix).

At this point it is about time to assess all the facts collected concerning the categorial assignment of parametric *cái, jiù, dōu* and *yě*. Here is a summary of the properties that have been discussed in this section.

(99) a. Parametric words are not adverbs, at least not on a reading of the term 'adverb' that could be characterized in non-negative terms.

     b. Parametric words are neither subordinators, nor are they resumptive elements.

     c. Parametric words are not focus particles because, even though they are sensitive to information-structure, they only relate to otherwise established focus readings instead of triggering them themselves.

     d. Parametric words are function words, i.e. they figure dominantly in the grammatical organization of sentences. This has led to their classification as functional heads in recent generative grammar. In itself and in theory-neutral terms, this does not mean very much, because functional heads are an extremely heterogeneous class.

     e. Parametric words may in most cases not be dropped, i.e. their use is not subject to speakers' choices. This underpins their grammatical nature.

     f. There are languages (among them Yukagir; for others see section 6.2.3) in which verbal agreement relates to information-structural categories.

     g. There are dialects of Chinese (or at least one such dialect exists, namely Cantonese) in which function words involved in the encoding of focus types partake in morphological processes, or at least in what may be called 'wider morphology', viz. phrase-level cliticization.

If we take all of this together, and if we take into account that Mandarin is an isolating language in which syllables do not fuse except for extremely limited cases of derivational word formation, the overall function

of parametric *cái*, *jiù*, *dōu* and *yě* is as close to verbal inflection as a language like Mandarin could possibly get to. A different option which Mandarin does not make use of would be to move verbs to a higher position in the syntactic structure such that the facts would syntactically resemble the Cantonese *dak*-case (cf. footnote 27). Note that parametric *cái*, *jiù*, *dōu* and *yě* must never be stressed if they are obligatory. This is a consequence of their phonological dependence on the immediately adjacent verbal category. (100) is the solution that I would like to propose for the problem of what the overall function of parametric words is, and what class of elements they belong to.

(100) Parametric *cái*, *jiù*, *dōu* and *yě* are semi-clitic function words or particles. They syntactically combine with a high functional projection above the verb that still belongs to the larger functional verbal domain; Shyu (1995) assumes this phrase to be an aspectual or a non-epistemic modal phrase.

The function of parametric particles is to reflect within the verbal domain the type of focus which precedes the verbal domain and which has otherwise been determined to be a focus of a particular kind.

Inasmuch as the verbal domain is equated with the background of the relevant focus-background structure, parametric *cái*, *jiù*, *dōu* and *yě* are agreement markers: Foci of specific kinds with specific morphosyntactic features agree with their backgrounds; the syntactic carrier categories of the background function are *cái*, *jiù*, *dōu* and *yě*'s sister-constituents.

Admittedly, postulating overt focus-background agreement for Mandarin will probably seem unattractive to many readers. Such an agreement relation inflates the category bag to be taken care of even further, and it is by no means clear to me how Mandarin focus-background structures and Mandarin syntactic structures can be mapped in every single case. But readers who are suspicious about the agreement claim need to say what they propose instead: I think I have shown that the usual run-of-the-mill analyses for focus-background phenomena simply do not work for parametric *cái*, *jiù*, *dōu* and *yě*, and the traditional categorizations as subordinators or connectives have likewise been shown to be inadequate.

Having presented the defensible part of my category discussion I would now like to turn to its more speculative portion. The main thread will be taken up again in the following section. The idea here is to subsume the focus-background agreement as proposed above under a more general subject-predicate metaphor. Marty's (1897) distinction among grammati-

cal (syntactic) subjects, logical subjects (agents) and psychological subjects (topics) gives us an idea of how old and how fruitful the widening of the range of application of the term 'subject' is: Since Marty's times true linguistic sub-disciplines have crystallized around these three subject connotations. What unifies all subject notions is the fact that one element of the linguistic encoding of a situation is extracted from the situational continuum and is opposed to the rest. This split yields one rather independent or autonomous element (syntactic subjects, agents of volitional actions, topics), and one dependent, non-saturated element (syntactic predicates, volitional actions minus agents, comments). Despite recent criticism concerning the overall peculiarity of this claim for Mandarin (cf. Sasse 1993 or Gasde 1999), it is a well-established fact that topic-comment structures (i.e. Marty's psychological subject and predicate) play an important role in the organization of Mandarin grammar. That is to say that in Mandarin topics have acquired a number of properties characterizing syntactic subjects: Sentence-initial position, control over certain syntactic processes, and the like. Whatever precise relationship one assumes to hold between the topic-comment partition and the focus-background partition, few people would call into question that both partitions operate on identical or at least closely related levels. Focus-background partitions have independently been given a formal treatment in terms of a subject-predicate metaphor (cf. the influential tradition starting with von Stechow 1981): λ-abstraction as used in this tradition is a way to split up a predicational whole into a subject-like focus part, and a predicate-like background part. Knowing that topic-comment structures play a major part in Mandarin syntax, and considering that focus-background structures are both clearly related to the topic-comment partition, and formalizable with the help of a subject-predicate mechanism (viz. λ-abstraction), it becomes plausible that Mandarin should display a phenomenon usually attributed to syntactic subjects, namely agreement within the verbal complex: In Mandarin specific foci agree with backgrounded predicates, because a focus, just like a topic, may be considered a kind of subject.

3.5   REVISITING THE NON-PROTOTYPICAL CASES

The categorial solution developed above works beautifully for all those sentences in which an overtly marked focus precedes the structural position of our agreement markers. This is demonstrated again in (101) (=(96)).

(101) a. <u>*Zhǐyǒu*</u> ZHÈ-zhǒng shū Lǎo Wáng *(cái) mǎi-guo.
only   this-CL:kind book Old Wang CAI   buy-ASP
'Old Wang has bought only THIS kind of book before.'

b. <u>*Zhǐ-yào*</u>   NǏ   LÁI,   wǒ *(jiù)   qù.
only-must you come I   JIU   go
'If YOU COME, I'll go.'

c. <u>*Lián*</u> TĀ   *(dōu) huì lái.
even (s)he DOU   will come
'Even (S)HE will come.'

d. <u>*Jíshǐ*</u>   NǏ   LÁI, wǒ *(yě) bù   huì   qù.
even.if you come I   YE   not will go
'Even if YOU COME, I will not go.'

The underlined focus-sensitive expressions force specific interpretations onto their respective foci. The semantic details of these interpretations are discussed in the following chapter. *Cái, jiù, dōu* or *yě* have to occur on the left edge of the main clause predicate, and by now I have justified why I think this should be considered a kind of agreement marking. An analogous solution for sentences as in (101') is less obvious, but also possible.[28]

(101')a. ZHÈ-zhǒng shū Lǎo Wáng cái   mǎi-guo.
this-CL:kind book Old Wang CAI   buy-ASP
'Old Wang has bought only THIS kind of book before.'

b. NǏ   LÁI,   wǒ jiù   qù.
you come I   JIU   go
'If YOU COME, I'll go.'

c. TĀ   dōu   huì   lái.
(s)he DOU   will come
'Even (s)he will come.'

d. NǏ   LÁI, wǒ yě   bù   huì   qù.
you come I   ye   not will go
'Even if YOU COME, I will not go.'

The sentences in (101) and (101') are identical except that in (101') no focus-sensitive expressions determining the focus interpretations are used. Given these conditions, it may seem attractive to consider *cái, jiù, dōu* and *yě* focus markers. It has, on the other hand, been shown that this analysis is impossible for cases like (101), and since we are probably not aiming at an account that postulates ambiguity, it will be preferable to

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assimilate the analysis of (101') to that of (101). I thus assume that Mandarin foci, just by themselves, are not restricted to any specific kind of focus interpretation. But speakers, when they produce an utterance, will have a specific focus interpretation in mind, and therefore foci in context will be restricted to more specific readings. Depending on one's theoretical choices this may either be implemented by assuming covert focus markers even in (101'), or by simply restricting the focus interpretation by a mechanism dependent upon contextual information. Both solutions will lead to the same result: The focus interpretations are not unrestricted anymore, and the use of *cái, jiù, dōu* and *yě* in (101') is just as obligatory as in (101). Note that no counter-evidence is constituted by the fact that in (101'a), for instance, *cái* might just as well be dropped, as then the sentence would mean 'Old Wang has bought THIS kind of book before'. The claim here is that the use of *cái* is obligatory if an *only*-focus precedes the structural position of *cái*. This condition is not fulfilled if *cái* is dropped, because simple focusing of the determiner, just by itself, does not restrict the focus interpretation in any specific way. I have to admit that this argument cannot easily be falsified, but that does not matter in this context: The claim concerning the obligatory use of the agreement markers in sentences such as (101) is falsifiable, and if seemingly divergent cases can – albeit unfalsifiably – be subsumed under the same generalization, this will strengthen the main claim.

A real problem for my analysis is the fact that, with *cái*, we find sentences in which interacting foci follow the particle, and no overt focus marker may be used.[29] Such a sentence is presented in (102), and sentences of this kind have already been discussed in section 3.1.2.A.

(102) *Xiǎo Wáng*   cái   lái-le   (*zhǐyǒu) YĪ-CÌ.
Little Wang   CAI   come-ASP   only   1-CL:time
'Little Wang has only come ONCE.'

For (102) it is a lot more difficult to defend the view that *cái* is not used as an adverbial focus particle. Worse still, if one assumes a c-command or precedence relation to be a prerequisite for the triggering of agreement-*cái*, the surface structure of (102) obviously does not deliver such a relation – quite the opposite. Still, when delimiting my empirical domain I have been unable to find independent evidence for sorting out such cases from the parametric uses of *cái*. The reason is the following: The focus interpretations of foci as in (102) do not differ even minimally from

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[28] Comparable data have already been discussed in (1) and (2) in section 3.1.1, but there the argument was limited to *cái*-foci.

[29] Those sentences in which the same appeared to be true of *jiù, dōu* and *yě* have been categorized differently in sections 2.2.5, 2.3.3 and 2.4.3.

analogous foci preceding *cái*. A second reason is constituted by the fact that the pre-*cái* position of foci and the post-*cái* position of interacting foci can be captured in independent terms: Any focus that can move at all, irrespective of *cái*, must do so in the presence of *cái* (see section 3.1.2.B). If the only reason to disregard the cases with post-verbal foci were the fact that they do not fit into my descriptive system, the whole classification of cases would – for justified reasons – run the risk of being called *ad hoc*.

What, then, should be done about sentences in which parametric *cái* precedes its interacting focus? One way out would be to give the argument firmer syntactic foundations and retain the uniformity claim. One might say that the focus in (102) actually does, on some level of derivation, precede *cái*, and that this is the level of representation where things really matter. The ungrammaticality of the overt focus markers in (102) could then be accounted for independently. In today's branches of generative grammar subscribing to the ideas of Chomsky (1995) the relevant level of representation would be a post-spellout level. The question immediately arising is: Why should the focus in (102) move at all? In current generative grammar movement is a highly constrained mechanism, and things only move as a last-resort option, i.e. in order to prevent derivations from crashing. The need to check features triggers movement, and features get checked in checking configurations, i.e. by way of specifier-head agreement. Both Shyu (1995), for *dōu*, and Zhang N. (1997, 2000), for *cái* and *dōu*, develop analyses of this kind. However, all of their machinery just serves to shovel the problem to a less obvious place. The difficulty for both accounts arises from the fact that orthodox Minimalism matches overt movement with the feature checking of strong syntactic features, while covert movement is matched with the feature checking of weak syntactic features.

One possible consequence for our problem is to say that, although the interpretations of the foci do not differ, the syntactic features must differ in strength: Whenever the focus overtly moves to a pre-particle position, strong features are involved, and whenever the focus is behind the particle on the surface, a weak feature is involved. This is the road Zhang takes, and she claims that feature strength is determined by the presence or absence of some other feature or some other element (see section 3.1.2.A). Without going into the details of Zhang's analysis here it is easy to see that her post-lexical feature-strength determination is quite a dreadful weapon – it is probably strong enough to wipe out a lot more than just the problem at hand. As long as the idea of triggered feature

strengths is not constrained any further, it does not minimize our problem.

The other possible consequence – and it, too, has been reported before – would be to say that in all those cases in which foci do not occur to the left of *cái* or *yě*, feature checking is not required, and a completely different account is needed. This would probably be Shyu's (1995) choice, but this is just an extrapolation from the treatment bare post-verbal foci receive in Shyu's study (op. cit.: 68f). Shyu claims that, apart from a feature-driven focus system, there exists a second phonologically driven focus device. Within the T-model of syntax with the phonological part of the derivation branching off at spell-out, this does clear the way, but if we apply it to our problem, we are left with the puzzling observation that it is one and the same phonological shape of a focus-sensitive device (namely *cái*) which is involved in the derivation of some feature-driven structure in some cases, while it is involved in the derivation of a phonology-driven focus-background structure in others. Again, this is not satisfactory.

To sum up we may say that it is difficult to make a decision concerning the treatment of cases in which *cái* precedes its focus because the results arrived at so far point into opposite directions. For one thing there is the kind of evidence favouring a uniform treatment: (i) the identical interpretation of the interacting foci in pre-*cái* positions and in post-*cái* positions; (ii) the predictable and uniform distribution of post-*cái* foci and pre-*cái* foci. The facts pointing in the direction of a homonymy solution include at least the following argument: Since the other agreement particles *jiù*, *dōu* and *yě* require their agreement triggers (i.e. their interacting foci) to precede them, the same should be true of *cái*; the only elaborate syntactic account to ensure a covert pre-*cái* position for foci that occur postverbally on the surface (Zhang N. 1997, 2000) makes use of a theoretical device that is probably too powerful; therefore, we are left without a plausible account which could syntactically assimilate the post-*cái* foci to the pre-*cái* foci. It seems we end up without any syntactic account to solve this problem. Still, I think that an analysis treating both *cái*-cases in a basically identical fashion should be given precedence over a homonymy account, simply because both a distributional argument (complementary distribution) and a semantic argument (identical meaning) exist to support this claim. One might speculate now whether the different relative positions of *cái* and its interacting foci will, one day, give rise to a split, but this would clearly be a future development.

4 *CÁI, JIÙ, DŌU, YĚ*
AND FOCUS SEMANTICS

This chapter will deal with the semantic types of quantification over domains of alternatives that each of parametric *cái*, *jiù*, *dōu* and *yě* is connected with. It thus concentrates on facts that result from the semantic core of the system proper, and not on its (morpho-)syntactic interactions. For issues relating to such exterior facts, the reader is referred back to ch. 3. The interaction of outer negation with existential or universal quantification over domains of alternatives yields the four classical types of quantification, and each single type of quantification over focus alternatives is associated with one of the words examined.

I will discuss *cái* and *jiù* separately (sections 4.1 and 4.2), while the discussion of *dōu* and *yě* will again be merged (section 4.3). The general design of the major sections will proceed according to the following schema. First, previous accounts of the focus-semantic function of parametric *cái*, *jiù*, *dōu* or *yě* are reviewed. Then my own proposals are introduced, and I will illustrate them with some suggestive examples. In the following sections the empirical coverage of each proposal is extended step by step so as to cover all possible contexts at the end of each major section. Section 4.4 will check whether the overall system emerging from the postulated functions of the parametric words can be tracked down in certain testing configurations. Before concluding this chapter I will give a sketchy account of *hái* and *zài*, two further words that should be included in the paradigm of parametric words in Mandarin (section 4.5).

4.1 THE FUNCTION OF PARAMETRIC *CÁI*

4.1.1 *Previous analyses of the function of parametric* cái

Previous attempts at pinning down the meaning contribution of *cái* vary along two major dimensions. The first dimension concerns its interaction with scales: Does each and every occurrence of *cái* have to be interpreted with respect to some semantic or pragmatic scale such that higher values on that scale are excluded as possible alternative values to the focus value? Or is this not a stable property of *cái*-sentences? Among the analyses which make reference to scales, two sub-groups may be distinguished: Either temporal scales are identified as prototypi-

cal of all interpretations of sentences with *cái*, or scales of different kinds may be claimed to be involved. The second dimension along which analyses vary relates to the theoretical status which is assigned to (the refutation of) discourse assumptions: Does *cái* refute wrong assumptions of discourse participants by way of an in-built lexical property, or is the refutation of a wrong assumption just a pragmatic phenomenon that is derivative of something else? I will briefly review each of these possible positions in order to justify the position which I want to take in the following: *Cái* does not necessarily relate to a scale, and the rejection of a wrong assumption is not part of the semantic stock of *cái*, either.

The most specific analysis of *cái*'s semantics has been proposed by Lai (1995, 1996, 1999). Lai claims that *cái* (not just parametric *cái*, but all uses of *cái*) 'presuppose[s] a change of state of the truth value of a proposition and [...] this change happens at a different point from where it is expected to happen', namely, at a later point in time, or after a higher point on some scale has been reached (Lai 1999: 625). Lai thus subscribes to the position which assumes a necessary interaction with a scale. The analysis is somewhat unspecific concerning the question whether temporal scales are basic or prototypical, and only relate metaphorically to other scales (e. g. informativeness), or whether different kinds of scales are mutually unrelated possible instantiations of a more general type of scales. The account is largely based on work on the semantics of German *erst* 'only...so far, not until' (König 1979, 1991a, Löbner 1989). For this line of analysis to apply smoothly to the Mandarin data, one major condition would have to be fulfilled: Just as in the German sentence (1) with *erst* 'only...so far', the Mandarin counterpart (2) with *cái* would implicitly have to make reference to a (temporal) scale.

(1) *Paul hat   erst   DREI Äpfel   gegessen.*
     Paul has   only.so.far 3   apples   eaten
     'Paul has only eaten THREE apples so far.'
(2) *Zhāngsān cái   chī-le   SĀN-ge   píngguǒ.*
     Zhangsan CAI eat-ASP 3-CL   apple
     'Zhangsan only ate THREE apples.' (Lai 1999: 640)

Lai claims that the Mandarin sentence is interpreted in accordance with this condition, i.e. the translation given for (2) is 'Zhangsan ate only three apples so far'. This is positively contrary to fact. Lai herself, at a point of the argument where scales are not the matter at issue, translates a similar sentence without reference to a temporal scale (*Lǐsì cái xiě-le yī-fēng xìn* 'Lisi only wrote a letter'; Lai 1999: 636). We may conclude that refer-

ence to temporal scales is not a necessary component of the interpretation of sentences with *cái*. If temporal scales are not always relevant, there could still be other kinds of relevant scales. Paris (1981) assumes interaction with scales of some kind, such that *cái* excludes values that rank between the asserted value and another contextually salient alternative value.[1,2] From a theoretical point of view, it is not very desirable to assume a highly unspecific, but semantically entrenched relatedness of *cái* to some kind of scale which may be either semantic or pragmatic in nature. If possible we should dispense with rich semantics like this. Fortunately, it is fairly easy to demonstrate the complete independence of *cái* from scalar facts. I will try to do this with the examples in (3) and (4) .

(3) *Xiǎo Wáng   chī   SĀN-ge píngguǒ,*
     Little Wang   eat   3-CL   apple
     tā   cái   néng jìnrù chéngbǎo.
     (s)he CAI can enter castle
     'Only if Little Wang eats THREE apples can he enter the castle.'
(4) *Xiǎo Wáng   CHĪ-LE   PÍNGGUǑ,*
     Little Wang   eat-ASP apple
     tā   cái   néng jìnrù chéngbǎo.
     (s)he CAI can enter castle
     'Only if Little Wang HAS EATEN APPLES can he enter the castle.'

At first glance, (3) appears to be a clear case of a sentence in which *cái* must relate to a scale, namely a scale of numbers of apples eaten by Little Wang. This sentence may be plausible in some fairy-tale context in which Little Wang cannot get into the castle without eating three magic apples first. I still claim that in this example *cái* does not necessarily relate to a scale. Of course, a scale is involved in the reading of (3) in which eating one or two apples would not be enough, but eating a fourth magic apple would not do any harm. Now imagine a situation in which eating exactly three apples is the open sesame. Eating two apples is not enough, but even nibbling at the fourth will likewise keep Little Wang

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[1] Paris' semantic analysis of *cái* boils down to mere complement exclusion (Paris 1981: 281ff). In cases in which reference to scales is made, Paris remains unspecific about how much of the scalar interpretive apparatus is really contextual, and how much forms part of the semantics of *cái*. Upon reading the scalar reasonings (pp 269–273), one gets the very strong impression that in some uses of *cái*, reference to scales is taken to be an in-built property of *cái*.

[2] Long discussions have been devoted to the question of whether lower or higher alternative values are excluded in *cái*-sentences. These (pseudo-)issues will be dealt with in section 4.1.3. What is of interest here is just the general point of scales interacting with *cái*.

out. In this scenario the condition to eat exactly three apples is as categorical as it could be, and the fact that a number is involved is irrelevant. Under these conditions (3) is still a perfect sentence. Now turn to (4). The most natural reading of (4) is one on which Little Wang has to find out what will open the castle's gate for him. He has tried all sorts of things but the only thing that will help is eating apples. No scale is involved in this reading. But now imagine the castle is secured by a triple mechanism: You first have to kill a dragon, then fight against some evil enemy, and only then will eating apples open the gate for you. In this case just eating apples will not do, this action will only help if it follows the killing and the fighting: An implicational scale of preconditions to enter the castle is established contextually. In such a scenario (4) is still appropriate. So we have two sentences, one of them favouring a reading in which reference to a scale is made, the other one favouring a reading with no scalar component. Without changing any elements of the sentences the readings may flip-flop if the embedding contexts change. This seems to me to be sufficient evidence for the claim that the use of *cái* is independent of, but compatible with, phenomena relating to scales. Researchers who support the same general claim include Alleton (1972) for those cases in which the interacting focus precedes *cái*, Biq (1988) and Eifring (1995). How exactly this interaction can be captured will be the matter at issue in section 4.1.3.

The second dimension of variance among previous approaches to the function of *cái* has to do with the theoretical status that is assigned to the refutation of a wrong assumption. Biq, in the second version of her analysis (Biq 1988: 86), and Lai (1995, 1996, 1999) both state explicitly that the excluded alternatives relevant to the interpretation of *cái*-sentences amount to wrong discourse assumptions; i. e. by way of uttering a sentence like (3), the assumption that eating two apples may open the gate for Little Wang, which may have been held by the addressee of (3), is refuted, and the correct assertion is introduced into the discourse. Although neither of the approaches is fully explicit, one may tell a difference of implementation among the two: Biq treats the expectedness of alternative values as a sufficient condition of their non-equivalence with the asserted value, whereas Lai must assume something like a predicate of expectedness operating on the non-asserted alternative propositions. As I will try to show below, this kind of expectation is probably not the right notion to generalize over the excluded alternatives. Still, to see where the differences among the two approaches and the shortcomings of each approach lie, I would like to look at both implementations in some

detail. The main line of argumentation will be taken up again in the paragraph which follows example (7).

Biq's analysis of the meaning of *cái* reads as follows:

(5)   *cái* (S')=P(K) & $\forall Y[P(Y)$ & expected'(Y) $\to$ Y$\neq$K], K$\in$D, Y$\in$D
        S' = the 'sentence' combined with C[*ai*]
        P = the relevant properties ascribed to the domain of quantification
        K = the asserted value
        Y = any member of the domain of quantification
        D = domain of quantification

She paraphrases (5) as '[(5)] says that when C[*ái*] combines with a sentence, K is asserted as the value which has the relevant defining properties chosen from the domain of quantification, and K is not one of those "expected" values which also have the relevant defining properties in the domain.' (Biq 1988: 87). To detect the problems of this analysis, let us look at a simple example as in (6).

(6)   *Xiǎo Wáng   cái   WǓ-SUÌ.*
        Little Wang   CAI   5-CL:year.of.life
        'Little Wang is only FIVE YEARS old.'

The intuitive idea is simple and clear: (5) says that Little Wang is five years old (i.e. *P(K)*), and inasmuch as there is an assumption in the discourse background that Little Wang is older than this (e.g. *P(six years)*), then the specific value of this assumption is not equivalent to the asserted value. However, the problems are likewise apparent. First, Biq's formal representation and her paraphrase mean different things. While her paraphrase presupposes the existence of one or several expected alternative value(s) (cf. 'one of t h o s e "expected" values ....' [my emphasis; D.H.] above), the first conjunct of her material implication in (5) leaves room for the possibility that there is no assumption at all (namely in those cases in which the protasis is false because the alternative value is not expected). Second, if the protasis in (5) is true, the whole expression may become contradictory, because in this case both *P(K)* and *P(Y)* would have to be true at the same time, and this would amount to saying that Little Wang in (6) is both five years old (his actual age), and also, say, six years old (if *P(Y)* is true). Third, the application of the predicate *expected'* to alternatives to the focus values involves a type mismatch: The argument of *expected'* as used here must be of a type which may be assigned a truth value at some point in time or in some possible world. A focus value like *five years*, however, cannot be assigned a truth value. So (5) is not a good notation of the intuition that underlies Biq's analysis.

Lai, too, distinguishes asserted from expected portions of meaning in the analysis; cf. (7) (Lai 1996: 161).

(7)　cái $(\varphi[x])(t)$:
　　　e: $\exists t' \ [t' < t \wedge \varphi[t']]$
　　　a: $\varphi[t] \wedge \neg\exists t' \ [t' < t \wedge \varphi[t']]$

Recall that Lai – in my eyes, wrongly – assumes temporal scales to be involved in each interpretation of *cái*. Therefore, reference to different points in time (*t* and *t'*) is made in (7). The line of (7) which gives the e(xpectation)-meaning of *cái* says that the asserted proposition was expected to be true at a point in time before the reference time. The a(ssertion)-line of (7) states the assertion expressed by a sentence with *cái*, plus the assertion that no earlier point in time exists at which the asserted proposition holds. This formal representation presupposes that an illocutionary or modal category of expectedness should be defined which must be on a par with assertion. I consider expectedness, just as likelihood, a theoretically dubious notion to enter into lexical specifications of function words unless they clearly belong to a modal paradigm. This may, to a certain degree, be a matter of taste, so let us return to the more empirical part of the question: Is it really the case that the refutation of a wrong assumption always plays a part in the interpretation of sentences with *cái*? I believe this is not the case. The most straightforward argument can be derived from the fact that clauses with parametric *cái* are perfect even if they encode the propositional content of an expectation shared by all discourse participants. This is exemplified in (8) and (9).

(8)　*Zhèngrú*　*wǒmen*　*měi-ge*　*rén*　*suǒ*　*yùqì-de,*
　　　just.as　we　every-CL　person　PRT　expect-ATTR
　　　Lǎo Lǐ　*Bā-diǎn*　*cái*　*lái.*
　　　Old Li　8-CL:o'clock　CAI　come
　　　'As we all expected, Old Li did not come until EIGHT o'clock.'

(9)　*Zhèngrú wǒmen*　*měi-ge*　*rén*　*suǒ*　*yùqì-de,*
　　　just.as　we　every-CL　person　PRT　expect-ATTR
　　　Lǎo Lǐ　*cái*　*mǎi-le*　*SĀN-ge*　*píngguǒ.*
　　　Old Li　CAI　buy-ASP　3-CL　apple
　　　'As we all expected, Old Li bought only THREE apples.'

If it were generally true that sentences with *cái* refute a wrong assumption in the discourse background, (8) and (9) should be odd. (8) and (9) are, however, perfectly natural sentences. One may, of course, try and expand the notion of expectedness or refutation: There may be modes of refutation that relate to social norms and to implicature frames based on

what is considered normal, and one may claim that, from this perspective, Old Li's arrival in (8) is still later than expected and that the number of apples in (9) is still lower than what is normal. Although I believe that all kinds of general background assumptions are essential to the interpretation of practically every utterance, I am convinced that the exploitation of this fact would lead us on a slippery slope in the case at hand. The point is that if we allow so many things to be covered by the same lexical notion 'refutation of a wrong assumption present in the discourse background', then suddenly most assertions can be argued to refute such an assumption, completely independently of words such as *cái*. After all, telling somebody something usually involves a component of unexpectedness – either hearers have no previous assumptions concerning the truth values of what they get to know, or their previous assumptions are corrected by the new information. If this is so, where should the dividing line be drawn between normal unexpectedness and refutation on the one hand, and *cái*-worthy unexpectedness and refutation on the other? It seems to me to be perfectly possible to derive the indisputable element of unexpectedness or refutation felt to be present in many utterances with *cái* from an interaction of a very parsimonious characterization of *cái* with general mechanisms of focus semantics and information-structure. This will be done in the next section.

Analyses with a comparable conclusion in this sub-domain of the characterization of *cái*'s function have been proposed by Biq (1984; this is her earlier treatment of *cái*, in Biq 1988 she explicitly refers to expectations; see the discussion above) and Eifring (1995).

In this section two major dividing lines between competing accounts of the function of *cái* have been reviewed: The first line separates accounts which analyze *cái* as necessarily interacting with (temporal) scales from other accounts which do not presuppose this necessity; the second division concerns the question of whether the use of *cái* always signals the refutation of an expected state of affairs which is assumed in the discourse background. The position taken here is minimalistic: Scales are not essential to the meaning of *cái*, and the refutation of expected states of affairs is not a precondition for the use of parametric *cái*, either.

4.1.2　Parametric *cái and the exclusion of alternatives: the straightforward cases*

In the following I will establish what I think a minimal account of the function of parametric *cái* should look like. The basic claim will be that *cái* is a reflex of a specific kind of focus within its verbal background (see the category discussion in section 3.4); the core semantics of the

interacting focus is that of negated existential quantification over the domain of contextually relevant alternatives.

Before setting out on the discussion, let me emphasize once more that *cái* is not analyzed here as an element which i n d u c e s an *only*-interpretation in any other element similar to the way focus particles like *only* do. Instead, *cái* just i n t e r a c t s with a focus that, independently, admits of a restrictive interpretation basically identical to that of foci marked by *only* in English. Thus, if a focus of the semantic kind relevant here enters into the right configuration (see the discussion in ch. 3), *cái* is just the agreement reflex of this focus within the verbal inflectional system. Therefore, in the course of discussion of the semantic properties of foci interacting with *cái*, it should always be kept in mind that *cái* does not induce the specific focus properties, it merely reflects them.

Two standard ways of capturing the meaning contribution of words such as English *only* are given in (10) (cf. König 1991a: 98f).

(10) a. *Only JOHN came to the party.*
      b. presupposition/entailment/implicature: John came to the party[3]
      c. entailment: $\neg \exists x [(x \neq John) \& (came\ to\ the\ party\ (x))]$
      c'. entailment: $\forall x [(came\ to\ the\ party\ (x)) \rightarrow (x = John)]$

According to (10b) and (10c), (10a) says that John's coming to the party is presupposed, entailed, or at least implicated, and it is entailed that nobody apart from John came to the party. Note that this entailment is compatible with a situation in which there were many people at the party. What matters is that none of the contextually salient alternatives to John came to the party, e.g. none of his class-mates, or none of his friends. That is to say that the domain of quantification over which the existential quantifier operates is determined relative to specific contexts, i.e. pragmatically (or semantically, if a context anaphor is assumed; see von Fintel 1994). (10c) and (10c') are equivalent ways of stating the same entailment. I will stick to the Horn/König-version (10c) in the following. Instead of using König's term 'restrictive focusing' I prefer the clumsier term 'negated existential quantification over domains of focus alternatives', or an easily identifiable variant thereof. This is done for reasons of terminological exactness which will become fully clear when the other

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[3] I will not indulge in yet another discussion of whether presupposition, entailment or conventional/conversational implicature is the right notion to capture the semantic/pragmatic status of (10b). To the best of my knowledge, the most recent comprehensive treatment of this classic problem can be found in Horn (1996). My interest concentrates on the entailment in (10c).

words that are the subject of this study are discussed: Since in the end we will have four types of quantification over domains of alternatives, König's terminological division into restrictive focusing and additive focusing will not be sufficient for our purposes. (11) summarizes what we have stated so far concerning the function of *cái*.

(11) a. *Cái* is an agreement marker; the verbal background agrees with a semantically specific focus. (See ch. 3 for details.)
      b. The interacting focus must be interpreted in such a way that there is no contextually relevant alternative to the focus value which could truthfully be used instead of the focus value in the *cái*-sentence (cf. (10c)). (to be revised)

These generalizations will take us quite far already. Unproblematic examples that have been introduced before (see section 2.1.1) include the following:

(12) a. *Zhǐyǒu   XIǍO WÁNG   cái   lái.*
          only   Little Wang   CAI   come
          'Only LITTLE WANG came.'
      b. *Lǎo Wáng   ZHÈ-běn   shū   cái   mǎi.*
          Old Wang   this-CL   book CAI   buy
          'Old Wang buys only THIS book.'
      c. *Lǎo Wáng   XĪNGQĪTIĀN   cái   gōngzuò.*
          Old Wang   Sunday   CAI   work
          'Old Wang only works on SUNDAYS.'
      d. *Zhǐyǒu   ZHÈLǏ   wǒmen   cái   néng   wánr.*
          only   here   we   CAI   can   play
          'We can play only HERE.'
      e. *Nǐ   LÁI,   wǒ   cái   qù.*
          you come   I   CAI   go
          'Only if YOU COME will I go.'
      f. *Chúfēi   XIǍO WÁNG   lái,   wǒ   cái   qù.*
          only.if Little Wang come I   CAI   go
          'Only if LITTLE WANG comes will I go.'
      g. *Yīnwèi   XIǍO WÁNG   HUÌ LÁI,   nǐ   cái   xiǎng qù.*
          because Little Wang will come you CAI   want go
          'You only want to go because LITTLE WANG WILL COME.'

In (12a-g) a subject, an object, a time and a place adverbial, and subordinate clauses or parts thereof are in focus. Sometimes the focus is overtly marked as quantifying over alternatives ((12a), (12d), (12f)), sometimes not. The cases of overt marking and non-marking might just as well be

reversed. In (12a), all contextually relevant alternative sentences that only differ with regard to the subject value are considered and excluded. In (12b), likewise, no salient item apart from the book at hand is such that it was bought. Old Wang in (12c) habitually works on Sundays and on no other day of the week. The unique possible relevant playground in (12d) is where the speaker is. No other concomitant factor apart from the addressee's coming in (12e) is such that it will ensure the speaker's action, while in (12f) the alternatives under consideration do not comprise all sorts of concomitant factors, but just situations in which somebody comes; among these, only the ones in which the person to come is Little Wang are such that the speaker will go. (12g) is just a reminder of the fact that the use of *cái* in matrix clauses in interaction with (parts of) subordinate clauses is not at all restricted to non-realis cases. None of the above interactions of foci with negated existential quantification over domains of alternatives is unheard-of. What is theoretically special about such foci and their interaction with *cái* is just that *cái* makes the background agree with the focus. If this were the whole story, it would be mysterious why quite a few studies have been devoted to determining the function of *cái*. So let us turn to the first set of potentially difficult cases in the next section.

4.1.3 *Parametric* cái *and scales: ignoring trivial alternatives*

One of the classic dilemmas in the analysis of *cái* can be illustrated with the following pair of examples.

(13) a. *Xiǎo Wáng*   *chī-le*   *SĀN-ge*   *píngguǒ cái*   *bǎo.*
Little Wang   eat-ASP   3-CL   apple   CAI   full
'Only after Little Wang has eaten THREE apples does he have enough.'

    b. *Xiǎo Wáng*   *cái*   *chī-le*   *SĀN-ge*   *píngguǒ.*
Little Wang   CAI   eat-ASP   3-CL   apple
'Little Wang ate only THREE apples.'

In (13a) numbers of apples lower than three are excluded as alternatives, while (13b) expresses that numbers of apples higher than three are excluded.[4] Such contrasts are discussed by Biq (1984: 80f, 1988: 89) and Lai (1999: 640f) for Mandarin, parallel phenomena in German and English are reviewed by Jacobs (1983: 224–31) and König (1991a: 101ff) under the heading of scale reversals. Biq, in one version of her theory

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[4] A look at the sub-types of *cái*-uses in section 2.1.1.B (examples (9) and (10)) obstructs the possibility to come up with a descriptive generalization that relates these two interpretive types to the relative position of *cái* with regard to its interacting focus.

(Biq 1984), and Lai both make explicit mention of the expectation or refutation of lower scalar values in their analyses of *cái*, and that makes sentences like (13b) problematic for their theories because the only scalar values that could be argued to be expected or refuted in (13b), are values higher than 'three'. While Biq is, in my eyes, on the right track to finding a solution to the problem, Lai makes the curious assumption that in cases like (13b) an implicit temporal value is in focus. Lower scalar alternatives are excluded, i.e. (13b) refutes the wrong assumption that the three apples were already eaten up earlier. Apart from the fact that, as argued in section 4.1.1, no reference to temporal scales in (13b) need be made, I find Lai's idea that foci might regularly be covert quite unusual and probably not very helpful.[5] Biq, together with all accounts of *only*-semantics that assume an evaluative component in the lexical meaning of *only*-words, has the problem that in order to maintain the claim that it is always lower values that are excluded, she must argue that alternatives to the focus value such as 'four' or 'five' in (13b) are somehow lower than 'three' and that 'three' is somehow a high value. She does so by referring to the notion of informativeness, but her argument (Biq 1988: 89ff) is quite lengthy and more pragmatic than necessary.

Note first that I do not assume the evaluational flavour of sentences with *only*-words and also with *cái* to be directly induced by *only*-words or *cái*. The exclusion of contextually relevant alternatives simply makes sentences with *only*-words and *cái* apt to be used in contexts in which an evaluation of a scalar value as particularly high or low is implied. What none of the above researchers clearly states is the fact that (scalar) entailments are properties of sentences in context, or of situations, but not of scalar predicates such as *five (apples)* (cf. Schwarzschild 1999 for a formalization). Eating five apples entails eating four apples, but *five apples* does not entail anything. We often have the impression that *five* (apples, for instance) does entail *four* (apples), but that just follows from the implicit existential closure that we add to such measure phrases out of context. I.e., we interpret *five apples* as *There are five apples* or *Five apples exist*, and these sentences certainly entail that four apples exist. Once this is admitted, all problems of scale reversals vanish.[6] A situation

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[5] Apart from this, I get the impression that the reading we ought to expect according to Lai's reasoning should really be something like 'It has taken Little Wang as long as until now to finish three apples'. This is yet farther away from what the sentence obviously means, than Lai's "official" translation.

[6] A similar way of incorporating these facts is to make use of so-called Horn-scales. I do not introduce them into the argument because their order is a direct function of the really underlying propositional entailment patterns.

in which one eats three apples is also a situation in which one eats two apples, i.e. it is trivial to add that two apples are eaten if somebody says that three apples are eaten. Therefore, if we want to meaningfully exclude alternative propositions (not scalar values, as is often assumed) as assertable in a given context, we should not exclude the trivial ones, because that would result in a contradiction. On the other hand, a situation in which (13a) can be uttered truthfully will under normal circumstances be one in which Little Wang would also have enough after eating one more apple. In normal situations in which body functions work regularly it is trivial to say that if one has enough after eating three apples one also has enough after four apples. Again, if we want to exclude alternative propositions as assertable in the given context, we better exclude non-trivial ones; and in this case non-trivial alternative propositions are such that less than three apples are eaten. Therefore, the fact that relatively high scalar values figure in the assertion of (13a), as opposed to relatively low ones in (13b), is a one-hundred-percent consequence of propositional entailment facts.

It is important to see that, from the point of view of the language user or the involved regularities, there is nothing "pragmatic" to these entailments which would set them apart from other implications. If researchers such as Biq emphasize the pragmatic nature of their entailments, they invent a distinction that does not matter from the point of view of linguistics. If everything is normal, Little Wang must have had enough after eating four apples if he has already had enough after three apples. If this is not so, the circumstantial conditions between the point in time when Little Wang had enough after the third apple, and the point in time when Little Wang does not have enough after eating a fourth apple must have changed, and the model within which both propositions are interpreted must be different (Little Wang might, for instance, have made a long pause between the third and the fourth apple so that he had time to digest the first three). All of this already follows from standard formal accounts of words such as *only* which pay attention to their monotonicity behaviour. Basically, I think that no more need be said about the so-called scale-reversals in *cái*-sentences. Still, we will have to revisit the issue in the next section when temporal scales enter the picture.

On the descriptive level it will do to modify (11) as in (14): It should get clear that by exchanging focus values we really contrast interpretations of sentences with different focus values, and the relevant alternative sentences must not be trivial, i.e. entailed by what the sentences without *cái* mean.

(14) a. *Cái* is an agreement marker; the verbal background agrees with a semantically specific focus.
   b. Among all possible alternatives to *cái*-sentences that only differ with regard to the focus value, only the pragmatically relevant set of non-trivial alternatives is considered, and all of them are entailed to be wrong.

4.1.4 Parametric cái *and temporal scales*

The classic dilemma concerning the interaction of parametric *cái* with temporal scales is easily stated.

(15) a. *Xiǎo Wáng   BĀ-diǎn   cái   lái.*
      Little Wang   8-CL:o'clock   CAI   come
      'Little Wang did not come until EIGHT o'clock.'/
      'Little Wang came as late as EIGHT o'clock.'
   b. *Xiànzài cái   BĀ-diǎn   zhōng.*
      now   CAI   8-CL:o'clock   clock
      'It is only EIGHT o'clock now.'

In (15a), *cái* appears to interact with the temporal scale in such a way that the scalar value *bā-diǎn* 'eight o'clock' is characterized as relatively high or late, and earlier values are excluded as Little Wang's time of arrival; in (15b) we get the impression that *cái* characterizes the same scalar value as relatively low or early, and it is therefore excluded that it is already later than eight o'clock. In the context of our investigation, a number of questions arises. A list is given in (16).

(16) i. Is the word *cái* as in (15a) the same word as in (15b)?
   ii. Are both *cái*'s or one of the two *cái*'s in (15) identical to parametric *cái* as discussed before?
   iii. If they are the same, how can uses as in (15) be assimilated to the other uses?

Question (16i) is answered with a clear 'yes' by most researchers. Alleton (1972) is probably an exception, since she assumes a general semantic difference between uses of *cái* in which the interacting focus precedes or follows *cái*, respectively. I think uses as in (15) should be covered by a single analysis of parametric *cái*. Seen from a cross-linguistic perspective, it would be extremely difficult to argue in the other direction, simply because the same dilemma is statable in so many languages (cf. König 1979, or Löbner 1989 for German, and the hint at parallel facts in Finnish, Polish and Serbo-Croatian in König 1991a: 117). The other distinctness question, namely (16ii), concerns the fact whether our analysis

should treat pairs as in (15) in accordance with the analysis of our old examples in (13), repeated here as (17).

(17) a. *Xiǎo Wáng chī-le   SĀN-ge   píngguǒ cái   bǎo.*
      Little Wang eat-ASP   3-CL   apple   CAI   full
      'Only after Little Wang has eaten THREE apples does he have enough.'

   b. *Xiǎo Wáng   cái   chī-le   SĀN-ge   píngguǒ.*
      Little Wang   CAI   eat-ASP   3-CL   apple
      'Little Wang ate only THREE apples.'

Recall that in these cases researchers have also claimed that *cái* marks scalar values as relatively high in (17a), and as relatively low in (17b). This is strikingly similar to the temporal cases in (15). There are differences, however. While it was easy to apply a focus semantics which involves negated existential quantification over alternatives to the sentences in (17), the same is not the case in (15). This is so because those alternative sentences that are trivialized by the implicational nature of the situations in either of (17a) or (17b) do not seem to be trivial at all in (15). While saying that Little Wang has only enough after eating three apples entails that he also has enough after eating five apples, saying that Little Wang came as late as eight o'clock does not entail his coming at nine o'clock. Likewise, the fact that Little Wang's eating of three apples entails his eating of two apples remains without parallel if we say that it is only eight o'clock, because if it is eight o'clock, this does not entail that it is seven o'clock. If these parallels do not exist, can we still say that there are any alternatives that are entailed to be wrong? I will try to assimilate the temporal cases in (15) to those in (17) as called for by (16iii). Before doing so, I will review previous proposals that deal with this or related questions (sub-section A). My own proposal is stated in sub-section B starting from p. 126.

A. Previous accounts
Paris (1981: 269ff) makes use of the notions of a focus value (her 'repéré') and of a contextually given alternative value ('repère'), which are ordered on a scale. In cases like (18a) (=(15a)) the focus value is situated higher on the scale than the alternative value, and lower in cases such as (18b).

(18) a. *Xiǎo Wáng   BĀ-diǎn   cái   lái.*
      Little Wang   8-CL:o'clock   CAI   come
      'Little Wang did not come until EIGHT o'clock.'/
      'Little Wang came as late as EIGHT o'clock.'

   b. *Xiànzài cái   BĀ-diǎn   zhōng.*
      now   CAI   8-CL:o'clock   clock
      'It is only EIGHT o'clock now.'

Both values are assigned truth values, such that the focus value in combination with the rest of the sentence is true, while the alternative value renders the sentence false. She states that *cái* makes a statement about the scalar portion between the focus value and the alternative value: Until just before the focus value is reached on the scale, all values between the focus value and the alternative value yield false sentences. The crucial point of her analysis is the following: Both in cases in which lower values are excluded, and in cases in which higher values are excluded, some relation with an orientation towards the lower value has its origin in the higher scalar value, i.e. in the focus value in cases like (18a), but in the alternative value in (18b). It is difficult to judge what the explanatory consequences of this reasoning are. Whatever they are, Paris has surely identified the main concepts that must play a role in a successful account. Partly independently of each other, most other accounts seem to boil down to very similar basic ideas, and we will see that they all make a comparable move in order to get to terms with the puzzling situation.

One version goes like this: While (18a) excludes the possibility of Little Wang coming earlier than eight o'clock, (18b) excludes the possibility of saying *It is eight o'clock* for any time earlier than the time of utterance. Alternative values in (18a) are earlier points in time on the objective temporal scale as indicated by clocks; in (18b) alternative values are earlier deictic reference times of which the same objective scalar time value, namely 'eight o'clock', could (falsely) be predicated. In both cases earlier points in time are excluded, and the puzzle may be claimed to be solved. Krifka (1993: 595) has introduced the general outline of this solution into the discussion, and his idea has been adopted by Lai (1995, 1996, 1999). The problem with this solution is that the general focus interaction of words like *cái* would have to be given up. In (18a) alternatives to the focus value *BĀ(-diǎn zhōng)* 'EIGHT (o'clock)' are considered and excluded, but in (18b) alternatives to the given reference time *xiànzài* 'now', which might just as well be dropped without influencing grammaticality or felicity, are considered and excluded. Krifka explicitly states that German *erst* obviously does not have to interact with a focus in these cases. I consider this a very drastic assumption, and if it should

be made use of it would definitely need independent support and something which constrains its range of application.[7]

The other variant is akin to this solution, but it does not centre around the exclusion of alternatives, but around the relative position of the expected temporal values. In (18a), the expectation must have been that Little Wang came earlier, so the expectation was ahead of reality: What really happens late was assumed to happen early. In (18b), the expectation must have been that it is already later than eight o'clock, and again the expectation is ahead of reality: What really happens late, namely that some temporal value higher than eight o'clock may be predicated of the time of reference, was assumed to happen earlier, namely 'now'. As in Krifka's analysis, the tie-up between obviously focused constituents and semantic reasoning is given up, because the scalar value which is late according to this reasoning is the overt focus value in (18a), but a contextually given alternative in (18b). This line of argument forms part of König's (1979: 157) analysis of German *erst* 'not ... until', but he only alludes to it because he thinks the real solution should be sought in the area of the exclusion of alternative values, and not in the area of conventional implicatures relating to expectations. He does not fully develop this "real" solution, but he seems to have the following in mind: Often certain results follow from an event. It is true of (18a), for instance, that Little Wang will be at the place of reference for some time after eight o'clock. If we assume that German *erst* or Mandarin *cái* somehow interact with a semantic representation of these resulting states, it would be contradictory to exclude later points in time: If Little Wang came at eight o'clock, he will in most cases still be there a minute later. In cases like (18b) 'an accomplished portion of a process etc. is under consideration' (König 1979: 157), and this seems to mean that earlier points in time cannot be excluded because the same process was already under way at these earlier points in time. Therefore, only points in time after eight o'clock are considered. The problem with this line of argumentation is that it cannot cover all aspectual classes of predicates in the same way: If Little Wang kicks a ball at eight, no resulting state exists which would render Little Wang's kicking of the ball at 8:01 impossible, or even implausible. Still it is generally possible to use *cái* (and German *erst*) in sentences which denote such situations; cf. (19).

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[7] A possible way of adding plausibility to Krifka's move would be to say that, in cases like (18b), *xiànzài* 'now' is a C(ontrastive)-topic. C-topics are known to be accessible

(19) a. *Xiăo Wáng   BĀ-diăn   cái   tī-le   qiú.*
      Little Wang   8-CL:o'clock   CAI   kick-ASP   ball
      'Little Wang did not kick the ball until EIGHT o'clock.'/
      'Little Wang kicked the ball as late as EIGHT o'clock.'

   b. German
      Hannes schoss den   Ball erst um   ACHT   Uhr.
      Hannes   kicked the   Ball ERST at   8   o'clock.
      'John did not kick the ball until EIGHT o'clock.'/
      'John kicked the ball as late as EIGHT o'clock.'

If König's analysis were to apply to these cases, one would need some mechanism which allows us to disregard later points in time the same way as in (18a), although nothing about the state of the ball after it was kicked at eight o'clock, nor about Little Wang or Hannes, is entailed or implicated in (19).

All of this is, admittedly, highly confusing, and I believe that we want something simpler and more intuitive than what has been proposed so far. A step in this direction is Löbner's (1989) analysis of German *erst*. In a way, his account is also a variant of those solutions which disconnect the semantic reasoning from the focus-background structure that we find in sentences with German *erst* and also *cái*; i.e. in order to keep something in the analysis of *erst* constant, Löbner gives up the descriptive generalization that *erst* interacts with (alternatives to) the focus value. His basic idea is that what is contrasted in sentences with *cái* is not different points in time, but faster and slower developments of the course of events. Imagine you start walking home from your office at 5 o'clock in the afternoon, and you take your time. At 5:30 you pass by the baker's shop. If you had hurried home you would have been there 15 minutes earlier, i.e. at 5:15. The first scenario is a slow development in Löbner's sense, the second one a fast development. Although basically the same things happen in the same order in both scenarios, the slow development has it that at each point in time, less has happened in comparison with the fast development.

Returning to (18a) we may say that Little Wang is in a slow development setting, and this kind of slow development is, according to Löbner, the common feature of all uses of German *erst*. If Little Wang had hurried up, i.e. if he had been in a fast development setting, the event of his coming would have happened earlier. Now turn to (18b). Again we are in a slow development setting: Time is creeping. But this time the slow course of events does not result in a late time coordinate for a given event. That the time is eight o'clock is the eventuality which holds true

representation of) time would not have crept so slowly (for the formal details of Löbner's account see Löbner 1989: 194ff). Thus, Löbner achieves the following: Although the focus value is late in (18a), and early in (18b), the developments are slow in both cases. Among all the reviewed proposals, this solution comes closest to our intuition, and it has the further advantage of being theoretically explicit. What it lacks from the point of view of our investigation is the tie-up with negated existential quantification over a domain of alternatives, i.e. it does not give an answer to the question in (16iii). In the remainder of this section I want to make use of the intuitive advantages of Löbner's analysis and combine them with the simple *cái*-function as delineated in (14b) above.

B. The solution advocated here

What I would like to propose is an analysis of temporal *cái*-uses in which some properties of Löbner's developments are reinterpreted as properties of a certain conception of points in time. Specifically, I will argue that adverbial temporal *cái*-foci invariably have an *until*-reading.

Let us say that each point in time may be associated with all the eventualities that have happened or that have been true up to this point.[8] This amounts to saying that all points in time are mapped to sets of eventualities, and any given set of eventualities of this kind contains all the members of the sets of eventualities to which earlier points in time were mapped. Needless to say, the set of relevant eventualities is constrained by discourse factors; neither can all eventualities at a given point in time be considered, nor all points in time prior to the relevant point in time. Let us call this discourse-constrained collection of eventualities an 'eventuality bag'. At any point in time we may check what is inside the eventuality bag, and we find that it always contains everything that has been the case so far. This eventuality bag has the following obvious property: At each point in time, it contains everything that earlier eventuality bags had inside them, and the content of each eventuality bag at a given time is also part of the contents of all eventuality bags at any later points in time. In the context of our discussion this is an interesting property because if we interpret the time coordinates of *cái*-sentences as really relating to eventuality bags, all later points in time are trivial with regard to the eventualities expressed in the *cái*-sentences. This is so since their associated eventuality bags contain everything which was inside the eventuality bag relating to the time coordinate of the *cái*-sentence. Applied to (18a) (repeated here as (20)): If it is true that Little Wang has arrived by eight

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[8] Independent evidence to support this will be delivered below. Impatient readers may peep ahead to example (22).

o'clock, it is trivial to say that Little Wang has arrived by nine o'clock, although the second statement is, of course, less informative than the first one if both are true.

(20) *Xiǎo Wáng   Bā-diǎn   cái   lái.*
      Little Wang   8-CL:o'clock   CAI   come
      'Little Wang did not come until EIGHT o'clock.'/
      'Little Wang came as late as EIGHT o'clock.'

This gives us a justification to disregard alternative points in time that are later than the focus value in (20). Now what about the earlier ones? If we apply the quantificational focus semantics that we have identified as constraining the interpretation of foci in *cái*-sentences, we get the following: No eventuality bag apart from the one associated with the time coordinate of the temporal *cái*-sentence (and apart from the disregarded ones) contains the eventuality asserted in the *cái*-sentence. This is tantamount to saying that the eventuality under consideration has not happened before the focused point in time. The interpretation of our example then reads as follows: Little Wang has arrived by eight o'clock, and of no other point in time is it true that Little Wang has arrived by then (unless we consider the trivial, i.e. later, alternatives). This gets us (20) out of the way because we have assimilated this temporal use of *cái* to the other uses of parametric *cái* which involve the ignoring of trivial alternatives, and the exclusion of non-trivial alternatives. What about (18b), though (repeated here as (21) for convenience)?

(21) *Xiànzài cái   Bā-diǎn   zhōng.*
      now   CAI   8-CL:o'clock   clock
      'It is only EIGHT o'clock now.'

Again we check the eventuality bag at the reference time 'now'. Among other things, it contains the eventuality that *eight o'clock* is the correct temporal predicate of our reference time. Also, the eventuality bag at eight o'clock must necessarily allow for the possibility of containing the eventuality that an hour ago it was seven o'clock, and it must generally allow for any other temporal predicate of other reference times that may have been relevant before the reference time 'now'. In other words, if it is true that it is eight o'clock at the reference time t, it must have been 8 minus x o'clock at any time t minus x, and each relevant instantiation of these matchings of t minus x and 8 minus x o'clock must be inside the eventuality bag at the reference time 'now': Before 'now' it had already been six and seven o'clock. So, earlier temporal predicates are trivial alternative values, because all the relevant eventualities are inside

the eventuality bag at the reference time. It does not contain the eventuality that at some future point in time it will be nine o'clock, because eventuality bags only have past eventualities inside them. In general, it does not host any matchings of reference times later than 'now' with temporal predicates later/higher than *eight o'clock*. This makes (18b)/(21) conform to the focus interpretation which has been identified as triggering the use of *cái*: It is excluded that any temporal predicate equal to or higher than 'eight o'clock' could truthfully have been applied to any of the reference times that have passed so far. In this model the exclusion of earlier points in time in (18a)/(20), and the exclusion of later points in time in (18b)/(21), is a consequence of the different semantic functions of the temporal predicates. In (18a)/(20) *bā-diǎn zhōng* 'eight o'clock' is a temporal predicate which restricts the temporal domain within which it is true to say that Little Wang came; it is a classic frame adverbial. As such, it is not "inside" the eventuality bag, it rather defines it. In (18b)/(21) *bā-diǎn zhōng* 'eight o'clock' is the main predicate, and therefore it constitutes part of what is inside the eventuality bag. The eventuality bag itself is defined by some time coordinate corresponding to the time of utterance 'now'.

The assumption that what really matters in *cái*-sentences are eventuality bags instead of points in time needs independent support which goes beyond the fact that by making use of this notion we can derive the desired quantificational focus semantic effects. For one piece of evidence, consider the following slightly changed version of (18a)/(20).

(22) *Xiǎo Wáng (zhídào)* Bā-*diǎn   zhōng   cái   lái.*
      Little Wang until   8-CL:o'clock clock   CAI   come
      'Little Wang did not come until EIGHT o'clock.'/
      'Little Wang came as late as EIGHT o'clock.'

(22) has constant truth conditions, no matter whether *zhídào* 'until' is used or not. It is generally possible to add this word to focused temporal adverbials in *cái*-sentences without changing the meaning. In the version with *zhídào* the reasoning presented above applies straightforwardly. If Little Wang has arrived by eight o'clock, it is trivial to say that he has arrived by nine o'clock, but it is not trivial to exclude his arrival before eight o'clock. Note that I do not claim that time adverbials in Mandarin always have a *by*-reading or an *until*-reading. I just claim that focused time adverbials in *cái*-sentences get a *by/until*-reading, and that is the same as saying that focused time adverbials in *cái*-sentences are not interpreted as points in time, but rather as eventuality bags.

What are the differences and similarities between the analysis favoured here for the temporal use of parametric *cái* and the previous ones reviewed above? Apart from the general difference that *cái* is only analyzed as a morphosyntactic reflex here, the differences are the following: Contrary to Lai's and Löbner's accounts, evaluations of points in time as late or early, or of developments as fast or slow, are kept out of semantics proper. Certain alternatives are excluded, and that makes temporal *cái*-sentences apt to occur in contexts in which these alternatives are expected to be true.

Löbner's analysis of German *erst* deals with a word that must relate to scales; recall that German has a normal *only*-word (*nur*) which contrasts with *erst* in this respect. Lai's analysis of *cái* "inherits" this general reference to scales, but I have shown in section 4.1.1 above that a scalar interpretation of its interacting focus is not a necessary condition of the use of *cái*. There is, however, a certain similarity between my analysis and Löbner's regarding his assumption of slow and fast developments such that German *erst* is said to always signal slow developments. Löbner establishes an implicational link between developments: At a given point in time, everything that has happened in a slow development so far must also have happened in a corresponding fast development. This is akin to my notion of eventuality bags at different points in time, because all contents of earlier eventuality bags are contained in later eventuality bags. The difference lies in the fact that my eventuality bags are functions of the time adverbials of temporal *cái*-sentences: The link between an observable focus-background structure and interpretation is preserved. Löbner's developments are functions of the succession and accumulation of events through time, but the time adverbials in focus are not related to the developments in a way which is as direct as my mapping from points in time to eventuality bags.

4.1.5 Parametric cái, subordinate clauses, and "necessary conditions"

This section will deal with some of those uses of parametric *cái* that go along with foci in subordinate clauses preceding *cái*. A relevant sentence is presented in (23).

(23) *Nǐ   LÁI,   wǒ   cái   qù.*
      you come   I   CAI   go
      'Only if YOU COME will I go.'
      'I only went because YOU CAME.'
      'I would only have gone if YOU HAD COME.'

'I only went when YOU CAME.'
'I will only go when YOU ARE COMING.'

Subordinate clauses such as the focus in (23) are – almost without exception – treated under the heading of 'necessary conditions' in the literature. This is done in spite of the indeterminacy of such sentences with regard to hypotheticality and temporal relations as witnessed by the different translations given for (23). I will, in the following, abstract away from this variability in hyotheticality and temporal relations. The claim to be made carries over to all of these variants, though.

Since the discussion concerning the linguistic expression of necessary conditions (as opposed to sufficient ones) is a classic topic in general linguistics and in the philosophy of language, and since in the course of discussing the Mandarin facts researchers often make reference to this tradition, I will feel free to mingle the general discussion and the treatment of Mandarin data in my argument.

Almost all studies which deal with the semantics of *cái* take the marking of necessary conditions to be at least one function of parametric *cái* (cf. e.g. Alleton 1972, Biq 1988, Cheng 1983, Eifring 1995, Lai 1995, 1996, 1999, Paris 1981, 1983, 1985). This strong tradition is a reflex of the fact that many complex *cái*-sentences translate as *only-if*-conditionals into English (or as *nur-wenn/falls*-conditionals into German, or as *ne...que-si*-conditionals into French, etc.), and *only-if*-clauses have in the Western tradition been analyzed as necessary conditions at least since the Middle Ages. But what exactly is a necessary condition? In terms of a common notation in logic, necessary conditions are the propositions at the pointed side of the arrow which is used to express the relation of material implication; consider (24).

(24)   a. $p \rightarrow q$
       b. $q \leftarrow p$

(24a) and (24b) are equivalent, i.e. they have the same truth conditions. Both relations are false if and only if p is true and q is false. Otherwise, they are true. Traditionally, this logical relation was equated with conditionals in natural languages. *If*-conditionals were taken to express material implications with subordinate p's, while *only-if*-conditionals were taken to be natural language realizations of material implications with subordinate q's. Since in natural language conditional clauses often precede the matrix clause, the expression in (24a) is used to represent *if*-conditionals, while *only-if*-conditionals are usually represented as (24b). (25) illustrates this with a classic example.

(25)   a. *If this animal is a mammal, it has a spine.*
       b. *This animal is a mammal only if it has a spine./
           Only if this animal has a spine is it a mammal.*

The tradition has it that (25a) and (25b) should be equivalent (the 'conversehood thesis'). In recent decades several controversies have arisen with regard to these phenomena. First, people have started to doubt whether *(only-)if*-conditionals are really the natural-language devices to express material implication.[9] Lewis (1975) and many others after him who work in the formal model-theoretic semantics framework (Kamp 1981, Heim 1982, Kratzer 1991b) have argued that bare conditional clauses headed by *if* only restrict the domain of quantification over which implicit – usually universal – quantifiers quantify; i.e. if I say (26a), I really mean (26b). That *if*-conditionals are not generally tied to universal quantification is shown by (26c), a conditional with overt existential adverbial quantification expressed by the word *sometimes*.

(26)   a. *If it rains I don't go jogging.*
       b. *If it rains I never go jogging./It is always the case that I don't go jogging if it rains.*
       c. *If it rains I sometimes don't go jogging./It is sometimes the case that I don't go jogging if it rains.*

(26c) may be true although there may be a situation in which it rains and I go jogging. Under this analysis *if* has nothing to do with material implication; the meanings of sentences with *if*-conditionals are just often compatible with the truth conditions of material implication because universal adverbial quantification as expressed by *always(/never)*, applied to a restrictor (the *if*-clause) and a nuclear scope (the embedding clause), gives us the truth conditions of material implication: If I never go jogging if it rains, all situations in which it rains are such that I do not go jogging in these situations, which means that it is licit to infer from rainy weather that I do not exercise outside. Nothing is entailed about outside exercise on other weather conditions, and this amounts to material implication.

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[9] Other approaches do not challenge the general idea of having conditionals boil down to notions such as material implication. Instead, it is argued that while *if*-clauses are basically sufficient conditions, *only-if*-clauses should correctly be analyzed as necessary and sufficient conditions (van der Auwera 1997: 181). In many respects this treatment comes close to the analysis proposed here, but it does not make reference to adverbial quantification or modality, notions which I think are crucial in this context. The painful quest for the correct analysis of natural language conditionals beyond the formal Lewis paradigm is reflected in Traugott et al. (eds) (1986) or Athanasiadou & Dirven (eds) (1997).

For more arguments and discussion, particularly of clear counter-examples against the claim that the material-implication theory can somehow be maintained, the reader is referred to Kratzer's (1991b) handbook article or von Fintel (1994). I will from now on assume that *if*-clauses are not the propositions at the non-pointed left end of the arrow of material implication, but rather explicitly expressed portions of context specifications within which the matrix propositions are claimed to be true in as many cases as are indicated by (covert) adverbial quantifiers such as *always, never, sometimes, most of the time* etc. and their equivalents in other languages.

Provided that conditional clauses headed by *if* are merely often compatible with the behaviour of sufficient conditions, conditional clauses headed by *only if* will hardly be necessary conditions in any straightforward sense if we aim at a compositional semantics of *only if*. It would for an independent reason be a surprising fact if we found out that *only if* boiled down to signalling necessary conditions: *only* is an element which always interacts with a focus-background structure, while the notion of a necessary condition is completely void of information-structural components. In other words: If the function of *only if* were to head necessary conditions why, then, should it be a necessary condition of its use to interact with a restrictive focus inside the conditional clause? Note also that any constituent of the *only-if*-clause may be in focus, but one of them has to be in focus (the same argument can analogously be stated for Chinese *cái*-sentences in which *cái* interacts with a focus in a subordinate clause that precedes *cái*).

(27) a. *Only if YOU pay me will I go.*
      b. *Only if you PAY me will I go.*
      c. *Only if you pay ME will I go.*
      d. *Only if you PAY ME will I go.*
      e. *Only if YOU PAY ME will I go.*
      f. *Only IF you pay me will I go.*

(27) assembles all focusing options that are available within the *only-if*-clause as long as we consider foci that interact with *only*. One of them must be selected if the sequence of words in (27) is to be uttered felicitously. This means that the focus-background partition in (27) is independent of the partition into main clause and subordinate clause as long as the only-focus remains restricted to the subordinate clause: While (27a), for instance, has a background which may sloppily be represented as *If someone pays me I will go*, (27b)'s background is *If you perform some action on me I will go*, and the background of (27c) would be *If*

you pay someone I will go. The only case in which the focus-background partition probably coincides with the relation among the propositional wholes *p* and *q* of the material-implication analysis is (27e) (*On some condition I will go*). I conclude that if we want to analyze *only if* compositionally we cannot claim that *only if* straightforwardly signals a logical notion such as necessary condition, which is theoretically entirely detached from the information-structural meaning format of *only*.[10] The same conclusion is reached by von Fintel (1994), and he tries to derive the purported meaning equivalence in (25) in a way that combines a model-theoretic possible-worlds account of conditionals with a standard meaning of *only*. But are the sentences in (25), repeated here as (28), really equivalent?

(28) a. *If this animal is a mammal, it has a spine.*
      b. *This animal is a mammal only if it has a spine./*
          Only if this animal has a spine is it a mammal.

I claim that (28a) does not mean the same thing as the b-sentences. Specifically, I want to argue that the b-sentences can only be interpreted as equivalent to the a-sentence if they are taken to be implicitly modalized. The relevant type of implicit modality is possibility. (Further examples below will show that possibility must be treated on a par with adverbial existential quantification, just like necessity and universal adverbial quantification). (28b') are the sentences that I claim to be the ones really understood if the variants in (28b) are interpreted as equivalent to (28a).

(28) b.' *This animal may only be a mammal if it has a spine./Only if*
          this animal has a spine is it possible that it is a mammal.

The following is a context in which uttering (28a) is fine, but insisting on (28b) would seem precipitate. On a trip through Australia you suddenly come across an animal that you have never seen before. It looks very much like a dog-sized mammal, but what you know about the fauna of Australia reminds you that this continent is the home of some obscure in-between creatures like platypuses. In order to find out whether you are dealing with a mammal, you first test whether it has a spine, because you know that mammals have spines (this actually does not help you very much because all serious competitor classes have spines, too, but you do not seem to be such an expert anyway): *If this animal is a mammal, it has a spine* or *If this animal is a mammal, it must have a spine* are good ways of expressing your reasoning; it would also be adequate to use

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[10] McCawley (1974) is an early proponent of a compositional *only-if*-semantics.

(28b'): *This animal may only be a mammal if it has a spine.* By no means are you entitled to say: *This animal is a mammal only if it has a spine*, because we clearly feel that this would – without implicit modalization – be a stronger claim: Either it (wrongly) presupposes that having a spine is a necessary and sufficient condition of being a mammal, or it requires a very special context. The following is such a context. Imagine a hypothetical class of animals called grammals. All kinds of grammals are furry beings, and some of them are as big as dogs, but they do not have spines. If you touch a grammal in the dark you may easily think that you are dealing with a mammal. Suppose further that grammals are frequent in Australia, and that this time you are a well-informed hiker. One night a furry creature enters your tent, and you want to know what it is. You know that furry animals are either mammals or grammals, and in this setting not just (28a), but also (28b) is a good reasoning. (28b) is fine here because (not) having a spine is a necessary and sufficient condition to tell mammals from grammals in this context. This is so because there are only two contextually possible categorizations: Either as a mammal, or as a grammal. Once again, I conclude that, irrespective of concomitant differences in typical discourse embeddings, (28a) and (28b) do not have the same interpretation. That amounts to saying that the two parenthesized expressions in (29a) are not equivalent, but the ones in (29b) are.

(29) a. (*if* p, q) ≠ (*only if* q, p)

  b. *if* p, *always* q
      ↔ *only if* q, *is it possible that* p
      OR *only if* q, *sometimes* p

If this is so, it should be possible to use an explicit modal operator of possibility or an existential adverbial quantifier in each *only-if*-conditional that is claimed to be equivalent to a reversed *if*-conditional. This is impossible to test. A viable way of supporting my hypothesis would open up if we found a language in which the modality of *only-if*-conditionals that are reversed *if*-conditionals may not be left implicit. Chinese is such a language. Consider the English example in (30a) – a sentence in the spirit of von Fintel (1994: 141ff) – and its translation into Mandarin in (30b).

(30) a. *If the president is at home, the gate of the president's residence is open.*

  b. *Rúguǒ   zǒngtǒng   zài   jiā,*
     if   president   be.at home

  zǒngtǒng-fǔ-de   mén jiù kāi-zhe.
  president-residence-ATTR   gate JIU open-ASP
  'If the president is at home, the gate of the president's residence is open.'

These sentences say that the set of situations in which the president is at home is a subset of those situations in which the gate is open. This allows for the possibility that there are situations in which the gate is open, but the president is not in; the president himself might be gone, but the president's spouse may be at home, and in these cases, too, the gate is left open regularly. In other words: The sentences in (30) have truth-conditions that are compatible with material implication. According to the plain conversehood thesis, the sentences in (30) should be equivalent to the ones in (31).

(31) a. *Only if the gate of the president's residence is open is the president at home.*

  b. *Rúguǒ   zǒngtǒng-fǔ-de   mén kāi-zhe,*
     if   president-residence-ATTR   gate open-ASP
     zǒngtǒng   cái   zài   jiā.
     president   CAI   be.at home
     'Only if the gate of the president's residence is open is the president at home.'
     not: 'Only if the gate of the president's residence is open may the president be at home.'

I stated above that, in the English case, implicit modalization of the matrix clause must be assumed if equivalence is intended. If (31a) is interpreted as 'Only if the gate of the president's residence is open is it possible that the president is at home', we get what we want: The gate is open at least in all those cases in which the president is at home. Now consider (31b). This Mandarin sentence has different truth conditions; it is false in all situations in which the gate is open and the president is out. If we want to have a Chinese sentence with a modalized interpretation, we need an explicit modal operator as in (31b').

(31) b'. *Rúguǒ   zǒngtǒng-fǔ-de   mén kāi-zhe,*
      if   president-residence-ATTR   gate open-ASP
      zǒngtǒng   cái   huì   zài   jiā.
      president   CAI   may   be.at home
      'Only if the gate of the president's residence is open may the president be at home.'

(31b') is true if the gate is open, the president is gone, but the spouse is in. It is false if the president is at home and the gate is closed. (31a) was false under the same conditions. This seems to me to be good evidence that the equivalence in (29b) is what we are really dealing with in *only-if*-converses of *if*-conditionals, no matter in what language we state them.

By now we know what is needed to change *if*-conditionals with (implicit) universal adverbial quantification (or equivalents in other languages) into *only-if*-conditionals (or equivalents in other languages); cf. (32).

(32) (i)   a reversal of *p* and *q*;
      (ii)   the deletion of the (implicit) universal adverbial quantifier;
      (iii) the addition of an (implicit) possibility operator or an existential adverbial quantifier;
      (iv)   the addition of a wide-scope *only*-word relating to a focus in *q*;

What we still do not know is exactly how the equivalence comes about, given that *only*-words are of a basically alien kind when compared with words that are used to indicate Boolean relationships among propositions.

To find this missing link, let us do a step-by-step calculation in diagrams. Recall that material implication as indicated by universally quantified *if*-conditionals amounts to a subset relation of situations: The set of situations in which the president is at home is a subset of the set of situations in which the gate is open (see Figures 4.1 through 4.4 for each of the set-theoretically taken steps to follow).

Now assume the very same thing for the reversed *only-if*-conditional in (31a), but ignore *only* and the requirement of modalization or existential quanfication for the moment: *If the gate of the president's residence is open, the president is (always) at home.* This flip-flops truth conditions: The set of situations in which the gate is open

Figure 4.1: Sets of situations corresponding to (30)

the set of situations in which the gate is open

the set of situations in which the president is at home
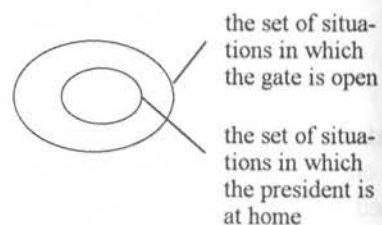
Figure 4.2: Reversing p and q

the set of situations in which the gate is open

the set of situations in which the president is at home
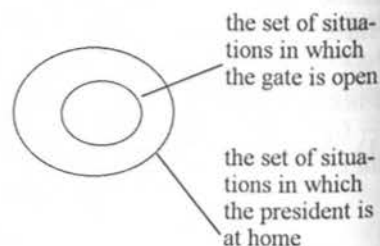
is a subset of the set of situations in which the president is at home (Figure 4.2).

At this point, substitute the possibility marker or existential adverbial quantification for the necessity marker or universal adverbial quantification: *If the gate of the president's residence is open, the president may be at home/is sometimes at home.* Set-theoretically, this gives us an intersection: The set of situations in which the gate is open intersects with the set of situations in which the president is in. The extreme case of an incidental subset relation is one possibility: If one set happens to contain only situations that are also members of the other set, intersection will result in a subset relation. Our intermediate sentence is compatible with both extreme subset possibilities apart from the truly intersective ones. It is true if no regularity can be observed, it is true if the regularity leads from the open gate to the president's being at home, and if it leads from the president's being at home to the gate being open. The truth-conditions of this intermediate sentence are a subset of the truth-conditions that hold for the sentence with which we started. (Of course, the intermediate sentence implicates that intersection does not result in a de-facto subset relation, but logically we are on the safe side.)

Figure 4.3: Adding possibility/ existential quantification

the set of situations in which the gate is open

the set of situations in which the president is at home

Figure 4.4 Adding only

the set of situations in which the gate is open

the set of situations in which the president is at home

Finally, we introduce *only*: *Only if the gate of the president's residence is open may the president be at home/is the president sometimes at home.* *Only* has wide scope, so we get an interpretation of the following kind: 'Apart from the situations in which the gate is open, no other situations are such that the president may be at home in these situations'. Thus, only if the gate is open is there a possibility that the president is in: The set of situations in which the president is at home is a subset of the situations in which the gate is open. In other words, *only* picks out the extreme case mentioned above in which intersection results in a subset relation. The resulting truth-conditions are identical to the ones of the sentence we started out from, and now we are where we wanted to get to:

Only-if-conditionals are equivalent to reversed universally quantified *if*-conditionals in which the (implicit) universal quantifier has been replaced by an existential adverbial quantifier or a modal operator of possibility.

(33) provides the step-by-step calculation for the observed equivalence between (28a) and (28b).[11]

(33) a. *If this animal is a mammal, it must have a spine.* (true)
         truth-condition: The set of mammals is a subset of the set of animals with spines.
      b. reversal of *p* and *q*: *If this animal has a spine, it must be a mammal.* (false in many contexts)
         truth-condition: The set of animals with spines is a subset of the set of mammals.
      c. replacing necessity by possibility: *If this animal has a spine, it may be a mammal.* (true, but not very informative)
         truth-condition: The set of mammals and the set of animals with spines intersect.
      d. adding *only*: *Only if this animal has a spine may it be a mammal.* (true)
         truth-condition: Apart from animals that have spines, no other animals may possibly be mammals. OR: The set of mammals is a subset of the set of animals with spines.

The conclusions of this section are as follows. A compositional semantics of *only-if*-conditionals and equivalents in other languages is possible. Parametric uses of *cái* with foci in subordinate adverbial clauses belong in this context. *Only-if*-clauses, just by themselves, do not express necessary conditions, but rather frame adverbials or, depending on one's theoretical preferences, restrictors of tripartite quantificational structures. If *only-if*-conditionals are interpreted as converses of *if*-conditionals, the (implicit) universal adverbial quantification, or the (implicit) modality of necessity of the *if*-conditional must have been replaced by (implicit) existential adverbial quantification or by (implicit) possibility. Mandarin is a language in which the modality of such converses may not remain implicit. That makes Chinese a good testing ground for the evaluation of the (dismissed) conversehood thesis.

For conclusions concerning the function of parametric *cái* turn to section 4.6.

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[11] This time, without reference to situations. Situations could easily be used here as well, but since we are dealing with very general propositions this would only make things clumsier.

4.2 THE FUNCTION OF PARAMETRIC *JIÙ*

4.2.1 *Previous analyses of the function of parametric* jiù

The overview of different sub-types of parametric *jiù* in section 2.2 includes quite a few phenomena that do not seem to lend themselves to a simple, over-arching generalization. The challenge posed by this situation is nicely reflected by the great variety of attempts to respond to it: Every researcher who has tried to define what the function of parametric *jiù* really is seems to have started from square one without relying on the results of previous researchers to any greater extent. Contrary to the systematic proceeding in the case of parametric *cái* in section 4.1.1, I have, for this section, chosen a chronological presentation of the major proposals.

Alleton (1972: 148ff) classifies parametric *jiù* as a marker of sufficient conditions or causes and of threshold values. This classification reflects the use of *jiù* in scalar and non-scalar contexts; cf. (34a) and (34b).

(34) a. *Nǐ   lái,   wǒ   jiù   qù.*
         you   come   I   JIU   go
         'If you come I will go there.'
      b. *Xiǎo Wáng   chī-le   sān-ge   píngguǒ jiù   bǎo.*
         Little Wang   eat-ASP   3-CL   apple   JIU   full
         'After Little Wang had eaten three apples he had enough.'

In both sentences the subordinate clauses instantiate conditions, but while natural readings of (34a) allow all kinds of other competing conditions, the most natural reading of (34b) will contrast Little Wang's eating of three apples with his eating of less than three apples. In Alleton's terms, the addressee's coming in (34a) is a sufficient condition of the speaker's action, while the eating of the third apple was the threshold that had to be passed before Little Wang had enough. Although it is surely possible to unify the notions 'condition' and 'threshold' in a way that would eliminate the disjunctive part from Alleton's generalization, another problem remains: The encoding of a sufficient condition or a threshold in a subordinate clause or in some other adverbial is not a sufficient condition of the use of parametric *jiù*. (35) and (36) deliver the data to prove this.

(35) a. *Gōngkè   yàoshi lā-xià-le,   wǒ bù   ráo   nǐ.*
         homework   if   pull-down-ASP I not   forgive you
         'If you don't do your homework properly, I won't forgive you.' (Eifring 1995: 22)
      b. *Nín   yàoshi bù   xiāngxìn -de huà,*
         you.POLITE   if   not   believe -if

nin   kěyǐ   qǐngjiào rénjiā.
you.POLITE can   consult other.people
'If you don't believe me, you can ask other people.' (rp: 3)

(36) *Xiūxi yī-huìr,*   *shi-fēn*   *zhōng hòu kāi   fàn!*
rest   1-CL:little.while 10-CL:second clock after start food
'Relax for a while, and in ten minutes we'll have dinner.' (rp: 14)

The subordinate clauses in (35) are overtly marked by *yàoshi* 'if', a word assumed to be at least compatible with the encoding of sufficient conditions, but still *jiù* is not used.[12] In (36) a scalar threshold is mentioned, and still *jiù* is not used. The key to the true nature of *jiù* must thus lie elsewhere.

The markedness relations that hold among parametric *cái* and parametric *jiù* are another fact which cannot be made to follow from Alleton's discussion. Although Alleton (1972: 157) herself mentions these relations, and although she states that *jiù* is unmarked with regard to *cái*, this relationship is not derivable from the meaning she ascribes to these elements: Sufficient conditions or causes are not the unmarked members in an opposition with necessary conditions or causes (Alleton's analysis of the function of parametric *cái*). At least not if one assumes a Jakobsonian markedness theory which takes the unmarked member of an opposition to be unspecified for the value for which the marked member is specified (cf. Jakobson 1936). Alleton clearly has such a markedness notion in mind, and so there is a clash between her analysis and her theoretical position in this respect.

Paris's (1981) account of *jiù* is partly symmetrical to her *cái*-analysis (see section 4.1.4). She claims that in scalar contexts some oriented relation may originate in a lower scalar value which relates the lower value to the higher value. In cases like (34b) the relation originates in the focus value, and *jiù* signals that starting from this scalar value, the assertion in which alternatives to the focus value may be used would have yielded true sentences. In other cases the relation still originates in the lower value, but this time the lower value is the (contextually relevant) alternative value. To demonstrate this kind of asymmetrical case, Paris (1981: 276) provides an example which conforms to a sentence type introduced in section 2.2.1.C. above.

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[12] Note in passing that I do not believe that *(only-)if*-clauses and their translational equivalents in other languages encode necessary or sufficient conditions by virtue of the mere use of *(only) if*; they are merely often compatible with the truth-conditions of these logical relations. See sections 4.1.5 and 4.2.3 for discussion.

(37) *Nǐ   YĪ-CÌ   jiù   mǎi   YĪBǍI-JĪN   dà   báicài* [...]?
you   1-CL:time JIU buy   100-CL:pound big   cabbage
'On A SINGLE OCCASION you are buying as much as A HUNDRED POUNDS of cabbage, [...]?' (cf. hx: 346)

Paris assumes that in such cases *jiù* interacts with *yībǎi-jīn* 'a hundred pounds', i.e. the information-structurally distinguished category which follows *jiù*. Alternative values such as *wǔshí-jīn* 'fifty pounds' rank lower, and according to Paris the relation originates in the lower value, although in this example it is not the focus value, but the alternative value. Just as with her *cái*-solution, I feel unsure to say what conclusions this theory allows us to draw. Moreover, I will argue below that what really interacts with *jiù* in cases such as (37) is not the focus value which follows *jiù*, but rather the focus preceding it.

Paris distinguishes a further case which must be set apart from the two other ones. Pertinent examples of this type do not imply a scalar distance between contextually salient scalar values and the asserted value; cf. sentence (38).

(38) *Xiǎo Wáng   qī-diǎn   zhōng jiù   lái   le.*
Little Wang   7-CL:o'clock clock   JIU   come PRT
'Little Wang came at seven o'clock (already).'

The reading of (38) reflected by the English translation without *already* does not relate to a different contextually salient point in time at which Little Wang might have come. In such cases Paris states a coincidence of the asserted and the contextually salient value. On the *already*-reading no such coincidence exists, and in this case she presupposes a contrast with a sentence that contains *cái*. In spite of the fact that I do not see clearly how Paris can successfully deal with all of these different readings, we must keep the different phenomena in mind: Any analysis of parametric *jiù* must be able to respond to the challenges posed by (the different readings of) the sentences in (34) through (38). Just as in the case of *cái*, which Paris claims to be "tied" ('attaché'; p. 280) to necessary conditions in complex sentences, she postulates the same kind of "tie" among *jiù* and sufficient conditions. However, the nature of the link between the logical relation of a sufficient condition and certain information-structural facts – with the latter ones obviously being relevant – remains opaque.

Biq has developed two different proposals to pin down the meaning of *jiù*. Her earlier version (Biq 1984) reduces the function of (parametric) *jiù* to mere focus marking: Sentences in which parametric *jiù* is used contain a "parameter" in focus such as conditional clauses or time adverbials. This minimalistic semantics will get the markedness relations right,

but it only allows us to make predictions that are extremely weak: Most sentences have foci, so it should be possible to use *jiù* in practically any sentence. Even if we only consider cases in which the focus precedes the predicate, i.e. if the most general syntactic restriction on the use of parametric *jiù* is respected, we can easily find sentences that are bad with parametric *jiù*. This is shown by (39), an example we will return to in the next section.

(39) a. #*Dōng-Yā rén   dāng zhōng,*
       east-Asia people   among
       RÌBĚN   RÉN   jiù   zhǎng-zhe   hēi   tóufa.
       Japan   people JIU   grow-ASP   black   hair
       'Among the people from East Asia, THE JAPANESE have black hair.'

   b. *Oūzhōu rén   dāng zhōng,*
      Europe   people   among
      ÌDÀLÌ   RÉN   jiù   zhǎng-zhe   hēi   tóufa.
      Italy   people JIU   grow-ASP   black   hair
      'Among Europeans, ITALIANS have black hair.'

Both examples are identical, with the exception of the name of the people, and its geographic location. While it is infelicitous to use *jiù* in the second clause in (39a) – the sentence is felt to be mildly contradictory or not to the point –, *jiù* may be used in the very similar b-sentence. Simple focusing cannot trigger such an effect. Biq's second analysis of the meaning of *jiù* is rendered in (40) (Biq 1988: 86f).

(40) *jiù* (S')=P(K) & ∃Y[P(Y) & Y≠K], K∈D, Y∈D
     S' = the 'sentence' combined with *jiù*
     P = the relevant properties ascribed to the domain of quantification
     K = the asserted value
     Y = any member of the domain of quantification
     D = domain of quantification

In natural language (40) says that the sentence with *jiù* is true with the focus value, and it is also true that there is some alternative to the focus value which is not identical to the focus value and which yields a true sentence if used instead of the focus value. Lai (1999: 627) correctly points out that this is what one usually takes to be the meaning of words like *also* or *too*, and it is beyond any doubt that *jiù* does not mean *also* or *too*.

The solution favoured by Lai (1995, 1996, 1999) is a mirror image of the account of *cái* (see section 4.1.1): *Jiù* is said to 'presuppose a change

of state of the truth value of a proposition, and [...] this change happens at a different point from where it is expected to happen. [...] [F]or *jiù*, the asserted value of change is located "farther down" [on the structure than the expected value]' (Lai 1999: 625). In other words: *Jiù* is a focus-sensitive phase adverb similar to English *already* or *as soon as* which presupposes an unexpectedly early change of state, or a change of state that is adverbially anchored in a scalar value that is unexpectedly low. (41) is Lai's formalization of this intuition (Lai 1996: 161).

(41) *jiù* (φ[x])(t):
     e: ¬φ[t] ∧ ∃t'[t < t' ∧ φ[t']]
     a: φ[t]

In my eyes, the criticism concerning the unclarified theoretical status of components of meaning relating to expectedness (the *e*-line as opposed to the *a*[ssertion]-line in (41)) carries over from the discussion of Lai's *cái*-solution. However, the most serious problem that arises for Lai's theory is the fact that it is by far too strong. Many uses of parametric *jiù* are completely void of expectations to the effect that the asserted fact becomes true earlier than expected. (42) is a slightly adapted example taken from Lai (1999: 626), and I have embedded it in two different contexts. The first one triggers a reading which seems to support Lai, but the second context reveals that the expectation denial must be entirely due to the context.

(42) [Context 1: Old Wang always arrives late for work. Sometimes he doesn't show up until 11 o'clock. Today was different, ...
     Context 2: Old Wang got up at six, took the bus at 6.30, and ...]
     tā   qī-diǎn   jiù   zài   bàngōngshì   le.
     (s)he 7-CL:o'clock JIU at   office   PRT
     Context 1: '...he was in his office as early as seven o'clock.'
     Context 2: '...at seven o'clock he was in his office.'

If we look at the second context, there is simply no room for an expectation to the effect that Lisi should have arrived later; in this context, being in his office at seven o'clock is just a normal thing to be true in an everyday chain of events. Natural language texts abound with such neutral *jiù*-readings. If *jiù* is substituted for *cái*, example (8) of section 4.1.1 can be used to support the same point. In this case (8) would simply mean 'As we all expected, Old Li came at EIGHT o'clock', with no refuted expectation to the effect that Old Li should have arrived later. The conclusion must be that Lai's analysis cannot be right. The refutation component of

the first context must be derived differently, and the essence of *jiù*'s function must be searched for elsewhere.

In this section, different proposals to account for the function of parametric *jiù* have been reviewed. It could be shown that none of the analyses developed so far allow us to generalize in a restrictive way over all instances of parametric *jiù*. In particular, three problems prevail in the analyses. Although many researchers note a link between sufficient conditions and *jiù*, none of them is able to say how a logical relationship such as that of sufficient conditionality can be expressed by an element whose main function must probably be seen in some special information-structural effect. Secondly, it cannot be true that *jiù* always expresses an expectation denial, or that it refuses a wrong discourse assumption, simply because parametric *jiù* is used in many contexts in which no such denial could reasonably be assumed. The third problem has to do with markedness relations: *Jiù* has repeatedly been argued to be the semantically unmarked member in an opposition in which *cái* is the marked member. An adequate analysis should make this intuition follow.

4.2.2 Parametric *jiù* and the exclusion of at least one alternative: the straightforward cases

The conclusion of the preceding section has been that neither the marking of sufficient conditions, nor the refutation of wrong discourse assumptions, nor simple focusing is the key notion if we aim at an analysis of *jiù*'s function. On the other hand, a systematic markedness relationship among parametric *cái* and parametric *jiù* should be reflected by any analysis of *jiù*'s meaning. In section 4.1 an analysis of parametric *cái* which regards this element as a reflex of negated *existential* quantification over domains of alternatives has been developed. For *jiù*, I want to claim that it reflects negated *universal* quantification over domains of alternatives: Some alternative to the focus value must be excluded.[13] Before turning to the complications of this analysis in the following sections, the present section will be devoted to discussing a suggestive pair of examples; I will provide a hint at what may be the general communicative function of the purported semantics of *jiù*-foci, an incompatibility argument will be presented, and a first version of the generalization to subsume all usages of parametric *jiù* will be provided.

The first pair of examples has been used in the preceding sub-section to establish the point that the use of parametric *jiù* cannot be said to go along with simple focusing. Examples (39a/b) are repeated here as (43).

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[13] For minimal pairs contrasting *jiù* and *cái*, cf. section 4.4.

(43) a. *Ōuzhōu rén   dāng zhōng,*
Europe people among
İDÀLÌ   RÉN   jiù   zhăng-zhe hēi   tóufa.
Italy   people JIU grow-ASP black hair
'Among Europeans, ITALIANS have black hair.'

b. *#Dōng-Yā rén   dāng zhōng,*
east-Asia people among
RÌBĚN   RÉN   jiù   zhăng-zhe hēi   tóufa.
Japan   people JIU grow-ASP black hair
'Among the people from East Asia, THE JAPANESE have black hair.'

While (43a) is a normal thing to say, (43b) is a strange utterance provided the speaker and the hearer know that, typically, all people in East Asia have dark hair. If we check this contrast against the background of our assumption concerning the type of focus going along with parametric *jiù*, the results are encouraging. (43b) is bad because the domain from which alternatives to the focus value are chosen only contains black-haired people: All alternatives are the same as the focus value with regard to the assertion made by the sentence. In (43a) things are different. World knowledge tells us that, apart from Italians, there are other peoples in Europe that are known to be constituted by people who have fair hair, or that are at least not as commonly dark-haired as the Italians. We thus quantify over a set of alternatives (i.e. other European peoples, or, more accurately, alternative sentences with other European peoples as focus values), and at least one alternative is false. One such alternative is, for instance, the following sentence rendered in English: *Among Europeans, Finns have black hair.*

There is an objection that is likely to be raised against this reasoning. This objection might be phrased as follows: (43b) may be infelicitous, but if *jiù* is dropped, (43b) is still objectionable. Therefore, it cannot be the use of *jiù* that renders (43b) deviant, but rather some other property distinguishing it from (43a). My answer to this is that while (43b) remains deviant no matter how we change the context, (43b) without *jiù* (= (44)) is impeccable if it is embedded in a supporting context.

(44) *Dōng-Yā rén   dāng zhōng,*
east-Asia people among
RÌBĚN   RÉN   zhăng-zhe hēi   tóufa,...
Japan   people grow-ASP black hair
'Among the people from East Asia, THE JAPANESE have black hair, ...'

Such a context might be an enumeration. Imagine a teacher talking about the way people look in East Asia. He might start by uttering (44), and he might continue as in (45).

(45) ... ZHŌNGGUÓ RÉN   *zhăng-zhe*   *hēi*   *tóufa,*
     Chinese   people   grow-ASP   black hair
     CHÁOXIĀN RÉN   *zhăng-zhe*   *hēi*   *tóufa,*
     Korean   people   grow-ASP   black hair
     Dōng-Yā   *rén*   *DŌU zhăng-zhe*   *hēi*   *tóufa.*
     east-Asia   people   all   grow-ASP   black hair
     '..., THE CHINESE have black hair, THE KOREANS have black hair, ALL East Asians have black hair.'

The sequence of (44) and (45) gets bad if parametric *jiù* is added anywhere. These examples show us that it is not a general property of focusing to imply that some alternative is false. Under most circumstances, this will be understood, but it is not stricly speaking part of the meaning of a sentence with a simple focus; otherwise, (44)/(45) ought to be impossible. However, if parametric *jiù* is used, it is signalled that the focus value comes from a domain that matters: At least for one other value from the contextually restricted domain of focus alternatives, the whole assertion would become false, that is what the use of parametric *jiù* reflects.

The second argument draws its plausibility from a result that will only be arrived at in section 4.3.2. Still, I will present it here because it is so simple, and compelling at the same time. Imagine a kind of focus marking signalling that all alternatives to the focus value, if used instead of the focus value, will lead to a true assertion. According to our present guess concerning the function of parametric *jiù*, such a focus marker should under no circumstances be able to combine with *jiù*, simply because negated universal quantification over focus alternatives on the one hand, and universal quantification over focus alternatives on the other constitute a plainly contradictory pair. If now we assume that *lián* 'even' is a focus marker quantifying universally over alternatives (more on this in section 4.3), the well-known unconditional incompatibility of *lián* and parametric *jiù* follows. This is to say that *lián* 'even' never combines with *jiù* because what *lián* presupposes is excluded by the type of focus relating to *jiù*: universal quantification over alternatives.

A preliminary statement of the function of parametric *jiù* which follows the pattern of the descriptive generalization given for *cái* in sections 4.1.2 and 4.1.3 might look as in (46). This first version of generalizations concludes the present sub-section.

(46) a. *Jiù* is an agreement marker; the verbal background agrees with a semantically specific focus. (to be revised)
     b. Among all the possible alternatives to *jiù*-sentences that only differ with regard to the focus value, the pragmatically relevant set of alternatives is considered, and it is presupposed that at least one of these alternatives is wrong. (to be revised)

4.2.3   Parametric jiù and "sufficient conditions"

The idea that the function of parametric *jiù* can at least partially be reduced to signalling suffient conditions is widespread. Alleton (1972), Biq (1988), Eifring (1995), Lai (1995, 1996, 1999), or Paris (1981, 1983, 1985) are proponents of such a *jiù*-function.

As in the case of parametric *cái* and its alleged tie-up with necessary conditions (see section 4.1.5), this descriptive tradition is a consequence of a translational fact: Many complex sentences with parametric *jiù* may be translated as *if*-conditionals into English. *If*-conditionals and their translational equivalents in other European languages have a long tradition of being analyzed as natural language realizations of the logical relation of material implication, and antecedents in material implications are sufficient conditions. (47) is a typical example which belongs in this context.

(47) *Rúguŏ xīngqītiān tiānqì*   *hăo,*   *wŏ jiù*   *qù pá shān.*
     if   Sunday   weather good I   JIU   go climb mountain
     'If the weather is fine on Sundays I go mountain-climbing.'

In cases of good weather the speaker of (47) will go mountain-climbing, and although it is not very likely that the speaker will go mountain-climbing if the weather is bad, we cannot logically conclude this from (47). The two propositions of (47) thus conform to the truth-conditional behaviour of material implication. Portions of section 4.1.5 have been devoted to showing that it is better not to derive this effect from the meaning of elements such as *rúguŏ* 'if' or *cái/jiù*, but rather from the interaction of implicit quantification/modalization and domain restriction (cf., again, the theories of conditionality in the tradition of Lewis 1975, Kamp 1981, Heim 1982, or Kratzer 1991b). The general idea is that the good weather in (47) is no longer a sufficient condition of the speaker's hiking trip if the (implicit) universality of the conditional sentence is toned down by an expression like *kĕnéng* 'maybe' or *yŏude shíhou* 'sometimes' as in (47') or (47'').

(47') *Rúguŏ*   *xīngqītiān*   *tiānqì*   *hăo,*
     if   Sunday   weather good

wǒ	jiù	kěnéng	qù	pá	shān.
I	JIU	maybe	go	climb	mountain

'If the weather is fine on Sundays, I may go mountain-climbing.'

(47'') *Rúguǒ xīngqītiān tiānqì hǎo,*

if	Sunday	weather good

wǒ	yǒude shíhou	jiù	qù	pá	shān.
I	sometimes	JIU	go	climb	mountain

'If the weather is fine on Sundays, I sometimes go mountain-climbing.'

(47') and (47'') unmistakably show that the use of *jiù* and of *rúguǒ* 'if' is not confined to cases in which it is possible to conclude from good weather that the speaker will go hiking, and that cases of mere situational overlap are also covered by these expressive means: In some situations in which the weather is good the speaker of (47') and (47'') goes hiking, in others he does not, and with respect to the bad weather cases we cannot be entirely sure. The conclusion must thus be that *jiù* may appear in complex sentences in which the logical relationship of material implication holds among the two propositions, but that this is not to be taken as a one-hundred-percent match.

Having demonstrated the inadequacy of the sufficient-condition proposal, let us return to the idea that the function of *jiù* lies in the realm of information-structure. Specifically, we ought to show how negated universal quantification over domains of alternatives, i.e. the focus quantificational type assumed here to determine the interpretaton of foci that interact with *jiù*, can be reconciled with *jiù*'s frequent use in apodoses of complex conditional sentences. The reasoning is similar to the one applied to complex *cái*-sentences in section 4.1.5, but a lot shorter than that. First, think of the relationship among weather conditions on Sundays on the one hand, and the speaker's mountain climbing activities in (47) on the other hand as of a subset relation: The set of situations in which the weather is fine is a subset of the set of situations in which our mountain climber practises his hobby. This allows for the possibility that he also goes mountain-climbing in situations characterized by weather conditions that are less pleasant (proper subset relation), or that he only goes if the weather is fine. However, under the strict reading with implicit universal quantification, those cases in which the weather is fine, but he stays in the plain, are not allowed. In other words, the subordinate *rúguǒ/if*-restrictor in (47) delineates a portion of situations in which the main predication is true without exception. As a next step assume that the predicate of the subordinate clause is in focus. This is represented in (48).

(48) *Rúguǒ xīngqītiān tiānqì HǍO, wǒ jiù qù pá shān.*

if	Sunday	weather good I	JIU	go	climb mountain

'If the weather is FINE on Sundays, I go mountain-climbing.'

(48) could be the answer to a question like *Tell me, what should the weather be like for you to go mountain climbing on Sundays?* According to my proposal for the analysis of parametric *jiù* (see (46)) the following conditions would have to be met: *Jiù* must be preceded by a focus (okay); alternatives to the focus value are considered, i.e. other possible weather conditions are taken into account (seems correct); it is presupposed that there is at least one type of weather that will keep the speaker from mountain-climbing, let us say, snowstorms, and probably also hail (equally plausible). This seems to be a good explication of what (48) means, but note that this meaning is not equal to the meaning of its English translation: While it may be reasonable to assume that an English speaking mountain climber will not risk his life in a snowstorm, the English translation in (48) does not explicitly exclude this. If used within the contextual embedding chosen here, the Mandarin version (48) does exclude it. If *jiù* is not used in (48), no specific quantificational type needs to be assigned to the domain of alternatives. This sentence would have the same truth conditions as the English translation that was given for it, at least with respect to the components of meaning that we are interested in here (cf. also the discussion of examples (43) through (45) in the preceding sub-section).

The contextual embedding that I have chosen to illustrate my reasoning may not be the one which comes to mind first when confronted with the sentence in (47). It is more common to use a sentence like this in a pair-list context as instantiated by the English example *On Sundays, if the weather is bad I stay at home and take care of my stamp collection; but if the weather is fine I go mountain-climbing.* This kind of context is more complex from the point of view of information-structure, and it is these complexities that I will turn to in the next sub-section.

Before doing so, I will readdress an issue from ch. 3. Among the subordinators that are listed if the expression of "sufficient conditions" in Mandarin is treated, one usually finds the word *zhǐyào*. (49) is a pertinent example.

(49) *Zhǐ-yào nǐ YÒNGGŌNG, nǐ jiù huì chénggōng.*

only-need you	hard-working	you	JIU	will	succeed

'If you WORK HARD, you will make it.'/
'You only have to WORK HARD to make it.'

The problem with *zhǐyào* has two sides to it. One of them concerns a potential mismatch between syntax and semantics: Although *zhǐyào* is invariably taken to subordinate its clause syntactically, the necessity operator forming part of it clearly has matrix scope, otherwise the sentence in (49) should come out as *If you only have to work hard you will make it* in English. The second translation of (49) allows a true rendering of the meaningful parts of *zhǐyào*, but only at the price of reversing the embedding relationship between the two clauses in English. In ch. 5, this side of the *zhǐyào*-problem will be studied in its systematic context. The other side of the *zhǐyào*-problem has to do with *zhǐyào*'s meaningful parts: Why is it that an *only*-word in a subordinator does not trigger the use of *cái* in the embedding clause, given the fact that *cái* is a reflex of preceding *only*-foci (see sections 3.1.1 and 4.1.2)? (50) is a variant of (49) in which the old regularity holds.

(50) *Zhǐyǒu nǐ   YÒNGGŌNG,   nǐ   cái   huì   chénggōng.*
      only.if you hard-working you   CAI   will   succeed
      'Only if you WORK HARD will you make it.'

This sentence conforms to our old generalization stated in (14b): It excludes the possibility that anything apart from hard work will do. This is not the case in (49); this sentence may be true in a situation in which hard work will achieve the desired result, but mere luck is not excluded as an alternative. The presence of an *only*-marker preceding the structural position of *cái/jiù* is thus not a sufficient condition of the use of *cái*. The only thing that matters is the interpretation of the focus, i.e. its specific kind of quantification over domains of alternatives, and not the presence or absence of a focus marker like *zhǐ*. By saying *Only p is necessary to q* with *only* scoping above necessity – the case of (49) – nothing is entailed about alternatives to *p* which might also make *q* possible. It is just excluded that more than *p* or anything else but *p* is necessary. In (50) things are different: *Only if p will q follow* or *Only p is such that q follows* excludes the existence of sufficient alternatives to p.

The last thing to be mentioned here is the effect of negated universal quantification that must, according to the generalization in (46b), be demonstrable for each occurrence of parametric *jiù*. This demonstration is almost trivial in the case of (49): The ¬∀-requirement says that there must be one alternative condition which is such that the addressee will not make it on this condition. This is necessarily the case, since otherwise the use of the necessity operator *-yào* would not be justified: If some behaviour is necessary, there must be some other kind of behaviour that will not do, e.g. playing computer games all day or going out every night.

Let us now turn to the information-structurally complex kinds of conditional sentences: Those involving foci and C(ontrastive)-topics.

4.2.4 Parametric *jiù* and C-topics

The matter to deal with in this section has already been alluded to in the context of (47)/(48) above (repeated here as (51)); it is further illustrated by (52).

(51) *Rúguǒ xīngqītiān tiānqì   [HǍO]*C-topic,*wǒ jiù QÙ PÁ   SHĀN.*
      if   Sunday   weather   good   I   JIU go climb mountain
      'If the weather is [FINE]C-topic on Sundays, I GO MOUNTAIN-CLIMBING.'

(52) *Yīnwèi [CHUĀNGHU   WÀIMIAN YǑU-GE   CHÚFÁNG]*C-topic,
      because window   outside exist-CL kitchen
      fángjiān jiù   ÀN   le.
      room   JIU   dark PRT
      'Since [THERE IS A FOOD STALL OUTSIDE THE WINDOW]C-topic, the room is DARK.' (hx: 346)

A question to which (51) could be part of an answer would be the Mandarin equivalent of *What do you usually do on Sundays?* If (51) is used to answer this question, we feel that the question has only partly been answered, and the speaker should also tell us what he does if the weather is bad. (52) in reply to *What's bad about the room?* evokes the feeling that this room has more shortcomings, and that those shortcomings are due to reasons different from the one mentioned in the sentence. The problem with these examples is that *jiù* clearly does not interact with the foci which follow it, but rather with a special information-structural category termed C(ontrastive)-topic, here in the tradition of Büring (1997, to appear).[14] So far, we have only analyzed examples in which *jiù* interacted with a focus (cf., however, the C-topic examples in section 2.2.1), and therefore we should be able to demonstrate the following:

(53) i. Generally, 'C-topic' should be a notion that is sufficiently similar to the focus notion to warrant effects of quantification over domains of alternatives;

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[14] The same phenomenon is covered by Lambrecht's (1994) contrastive topic notion or Liu & Xu's (1998) topic foci (Büring's 1997 term for it was S(entence)-topic). Liu & Xu assume the feature combination [+contrastive], [–prominent] for topic foci. I have nothing to say about the phonological or phonetic difference between the prosodically prominent part of foci as opposed to the prosodically prominent part of C-topics in Mandarin.

ii. Specifically, the focus quantificational effect assumed here to be reflected by *jiù* should be compatible with C-topics.

Concerning the first question I will begin by giving a brief and very informal survey of some of Büring's (1997, to appear) findings. This overview, just by itself, will emphasize the parallels between foci and C-topics.

Büring assumes a hierarchical information-structural partition of sentences which minimally yields a focus and a background. The background itself may further contain a C-topic. C-topics induce a kind of stacked or recursive consideration of alternatives. To see what this means, let us start with a variant of (51) which only has a focus, but no C-topic.

(54) *Rúguǒ   xīngqītiān   tiānqì   hǎo,   wǒ   QÙ PÁ   SHĀN.*
      if   Sunday   weather good I   go climb mountain
      'If the weather is fine on Sundays I GO MOUNTAIN-CLIMBING.'

This sentence would be appropriate as an answer to a question like *What do you usually do on Sundays if the weather is fine?* It relates to alternative sentences which only vary with respect to the focus value *qù pá shān* 'go mountain-climbing' such as Mandarin equivalents of *If the weather is fine on Sundays I go fishing/I go bird-watching/I stay at home and rearrange my stamp collection/I stay at home and clean my basement*. The contextually relevant alternative sentences may be regarded as members of a set, and this set of alternative sentences, which also has the identical alternative to the asserted sentence as a member, is taken to be the focus meaning of a sentence (cf. Rooth 1985).[15] Note that the set of contextually salient alternatives need not exclusively have plausible members. It is, for instance, not very likely that the speaker of (54) habitually cleans his basement on Sundays if the weather is fine, but still this is a possible alternative sentence which forms part of a possible relevant focus meaning of (54) in context. Just think of a context in which (54) is used to express one's disapproval of a friend's suggestion to clean the basement this weekend: *What are you thinking? The weather is so beautiful, and I'm supposed to clean the basement? If the weather is fine on Sundays I go mountain-climbing.* Given this context, the focus meaning of the sentence must contain something like *If the weather is fine on Sundays I*

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[15] This view of alternative set formation could, if necessary, be implemented into the present proposal. For ease of exposition, I assume the asserted proposition n o t to be part of the set of alternatives over which focus quantification operates.

clean the basement, because that is what is rejected by (54) under these conditions.

When C-topics come into play, the same mechanism that applies to the original sentence to yield the focus meaning now applies to the focus meaning of a sentence (cf. (55)).

(55) *Rúguǒ xīngqītiān   tiānqì   [HǍO]*$_{\text{C-topic}}$*,wǒ jiù QÙ PÁ   SHĀN.*
      if   Sunday   weather good   I JIU go climb mountain
      'If the weather is [FINE]$_{\text{C-topic}}$ on Sundays, I GO MOUNTAIN-CLIMBING.'

Our focus meaning *{If the weather is fine on Sundays I go mountain-climbing, If the weather is fine on Sundays I go fishing, If the weather is fine on Sundays I go bird-watching, If the weather is fine on Sundays I stay at home and rearrange my stamp collection, If the weather is fine on Sundays I stay at home and clean the basement, If the weather is fine on Sundays I play the flute, ... }* will thus be inflated to become a set of focus meanings, i.e. a set of sets of alternative sentences, because the mechanism of relating sentences with C-topics to relevant alternatives takes focus meanings as inputs. A possible two-member set of such focus meanings of (55) is given in (56).

(56) *{{If the weather is fine on Sundays I go mountain-climbing, If the weather is fine on Sundays I go fishing, If the weather is fine on Sundays I go bird-watching, If the weather is fine on Sundays I stay at home and rearrange my stamp collection, If the weather is fine on Sundays I stay at home and clean the basement, If the weather is fine on Sundays I play the flute, ... },*

{If the weather is bad on Sundays I go mountain-climbing, If the weather is bad on Sundays I go fishing, If the weather is bad on Sundays I go bird-watching, If the weather is bad on Sundays I stay at home and rearrange my stamp collection, If the weather is bad on Sundays I stay at home and clean the basement, If the weather is bad on Sundays I play the flute, ... }}

The two sets that are the members of the superset only vary with respect to the value in the position of the C-topic of the assertion: The first set includes all alternative sentences of the focus meaning, the second set contains identical sentences, but this time with a different C-topic, namely *bad* instead of *fine*. Another way of sloppily rendering this information-structural dimension of meaning would be to say that (56) represents something like *If there is x-weather on Sundays, I do y*. Büring (to appear) integrates this analysis into the wider frame of a complex model

of discourse: Each sentence in a discourse is taken to answer a(n implicit) question, Büring's Q(uestion)U(nder)D(iscussion). Sentences without C-topics answer QUD's in a complete way, whereas sentences with C-topics always relate to a sub-question of a more general QUD. Consider (57) (cf. Büring 1997, to appear).

(57) Q: *What did the pop stars wear?*
     A: *The pop stars wore GLITTER COSTUMES.*
     A': *The [FEMALE]*C-topic *pop stars wore CAFTANS.*

(57A) conforms nicely to the conventional wisdom about question-answer pairs: The answer to the preceding question contains a focus with the new information in (roughly) the same syntactic function as the question word in (57Q). Now turn to (57A'). If this sentence is used to answer (57Q), Büring would say that what the speaker really does is not answer (57Q), but rather an implicit sub-question, namely (57'SQ), the I(mmediate)QUD:

(57') SQ: *What did the female pop stars wear?*

That is tantamount to saying that the use of a C-topic in (57A') is a strategy to signal that the sentence in which it is used does not answer some complete QUD, but only part of it. Other dicourse configurations allow speakers to make conversational moves of diverse kinds, because speakers need not restrict themselves to straightforwardly answering questions or sub-questions, they may, for instance, also insinuate new super-questions. (58) is a pertinent example from Büring (to appear).

(58) Q: *Where were you at the time of the murder?*
     A: *[I]*C-topic *was AT HOME.*

If (58A) had been uttered without the C-topic prosody it would have answered (58Q) without any residues. But (58A) is different, it is somehow an excessive answer, because it is really a partial answer to an implicit overarching QUD as in (58').

(58') Q: *Who was where at the time of the murder?*

By bringing a second variable into play, the speaker of (58A) insinuates that somebody else may not have as watertight an alibi as the speaker himself.

Along such lines of argumentation, Büring develops a typology of possible implicit moves, but this typology is not immediately relevant to our concern here. The interested reader is referred to Büring's original work for the explicit theory of discourse structure, question-answer congruence and other related matters. What the preceding discussion has shown with-

out any doubt is that C-topics are similar enough to foci to be of some relevance in a discussion of information-structural effects and quantification over domains of alternatives; the potential obstacle mentioned in (53i) above has consequently been cleared.

What about (53ii) now, namely the plugging-in of negated universal quantification over domains of alternatives? If *jiù* always signals the presence of an information-structurally distinguished element which has a reading of the ¬∀-type, we will have to show in what way this is compatible with C-topics and their Büring-style analysis.

Let us start by looking at (59) (=(51)) again.

(59) *Rúguǒ xīngqītiān tiānqì*   *[HǍO]*C-topic,*wǒ jiù QÙ PÁ   SHĀN.*
     if   Sunday   weather good   I JIU go climb mountain
     'If the weather is [FINE]C-topic on Sundays, I GO MOUNTAIN-
     CLIMBING.'

Intuitively, negated universal quantification over the domain of alternatives should yield a focus-semantic meaning like the following: 'If the weather is fine on Sundays I go mountain-climbing, and it is not true of all other weather conditions on Sundays that I go mountain-climbing on these conditions'; an equivalent statement would be 'If the weather is fine on Sundays I go mountain-climbing, and there is at least one kind of weather condition on which I will not go mountain-climbing on Sundays'. Intuitively clear as it is, this spell-out is not easily stated in terms of our C-topic account. This is so because the alternatives being considered with regard to C-topics are not sentences, but sets of sentences (cf. (56)). Therefore, if we want to follow our intuition and aim at picking out minimally one alternative sentence, namely the first sentence of the second set in (56), and say that it is presupposed to be wrong, we have not excluded one set from the domain of alternative sets, but only one member of a set of alternative sentences.

I am not entirely sure what to do about this problem, and how much of Büring's theory would have to be changed to accomodate the data that we are interested in. But at least I can point out a formal operation that will serve as a remedy for our present problem. If we take Büring's set-of-sets representation for focus meanings of sentences with a focus and a C-topic, and form the generalized union over this set of sets, things are the way we need them. The generalized union over the set of sets will be a single set without any subsets, and its members will be all alternative propositions considered, no matter whether they differ with respect to the value of the C-topic, or the focus value, or both. This flat set of alternatives is given in (60).

(60) *{If the weather is fine on Sundays I go mountain-climbing, If the
weather is fine on Sundays I go fishing, If the weather is fine on
Sundays I go bird-watching, If the weather is fine on Sundays I
stay at home and rearrange my stamp collection, If the weather is
fine on Sundays I stay at home and clean the basement, If the
weather is fine on Sundays I play the flute, If the weather is bad
on Sundays I go mountain-climbing, If the weather is bad on
Sundays I go fishing, If the weather is bad on Sundays I go bird-
watching, If the weather is bad on Sundays I stay at home and
rearrange my stamp collection, If the weather is bad on Sundays
I stay at home and clean the basement, If the weather is bad on
Sundays I play the flute, … }*

This representation allows us to apply our by now familiar quantifica-
tional procedure: Not all of the alternatives are true, and among the false
alternatives we find the sentence *If the weather is bad on Sundays, I go
mountain-climbing*. I will not enter any further into the technicalities of
this problem here but rather restrict myself to saying that requirement
(53ii) has not fully been catered for in the present proposal.

A whole new problem comes into play when we consider (52) again,
repeated here as (61).

(61) *Yīnwèi* [CHUĀNGHU   WÀIMIAN YǑU-GE CHÚFÁNG]$_{\text{C-topic}}$,
because window   outside exist-CL kitchen
fángjiān jiù   ÀN   le.
room   JIU   dark PRT
'Since [THERE IS A FOOD STALL OUTSIDE THE WINDOW]$_{\text{C-topic}}$, the
room is DARK.' (hx: 346)

This sentence is good in a context in which the pros and cons of renting a
specific room are discussed. The general Q(uestion)U(nder)D(is-cussion)
is something like *What's bad about the room?*; the – probably implicit –
I(mmediate)QUD is *What's the bad consequence of there being a food
stall outside the window?* (61) with *jiù* presupposes that not all alterna-
tive settings in which no food stall is present would result in the room
being dark. This time *jiù* does not just interact with a C-topic, the
alternatives are also of a different, counterfactual kind. Alternatives that
are relevant to *jiù* are not different asserted reasons of different conse-
quences, but counterfactual conditions: *If there were no food stall out-
side the window, the room would be dark* or *If there were a night market
outside the window the room would be noisy*, this is the kind of alterna-
tives that are considered as a consequence of the presence of *jiù*, and it is
presupposed that at least one of them is wrong (the first one in our case).

Sure enough, this difference is due to the different kinds of complex
sentences in which *jiù* is used. While (59) is a conditional sentence in
which quantification over more than one situation (all weekends with
good weather) is involved, (61) is a statement about a single situation (a
shortcoming of a single room). We will return to this phenomenon in the
yě-section 4.3.5, where it plays an important part in the unification of
additive focus semantics with certain examples of non-conditional con-
cessivity. For our descriptive generalizations the revised version of (46)
in (62) follows.

(62) a. *Jiù* is an agreement marker; the verbal background agrees with
       a semantically specific focus or C-topic. (to be revised)
     b. Among all the possible alternatives to *jiù*-sentences whose
       propositions only differ with regard to the focus or C-topic
       value, the pragmatically relevant set of alternatives is consid-
       ered, and it is presupposed that at least one of these alternatives
       is wrong or would be wrong. One of these alternatives is
       wrong in those cases in which the alternatives are not counter-
       factual (in habitual *if*-sentences, for instance); it would be
       wrong in those cases in which counterfactual alternatives are
       considered. (to be revised)

The main point to be brought home from this section is the empirical
observation that *jiù* is often used in sentences with complex information-
structural partitions: Foci, backgrounds, and C-topics within the back-
grounds, can be distinguished in such sentences. C-topics, just like foci,
involve the consideration of alternatives. In such complex sentences, *jiù*
interacts with the C-topic preceding it, and negated universal quantifica-
tion over domains of alternatives may be said to operate over the general-
ized union of the focus meaning of the sentence which has both a C-topic
and a focus. Apart from sentences in which non-counterfactual alterna-
tives are presupposed as false, *jiù* may also be used to indicate quantifi-
cation over domains of counterfactual alternative sentences.

4.2.5 Implicit C-topics

In the preceding section we have seen that *jiù* may interact with preceding
elements that are probably not foci, but C-topics. Some uncertainties
have remained with respect to the interaction of C-topics with the focus
semantics assumed here to be relevant for the use of *jiù*. In this section
the theoretical challenge is enhanced by the fact that *jiù* must sometimes
be argued to interact with extra-sentential or implicit C-topics. Example

(63), an attested sequence from a radio play, has already been quoted in section 2.2.1.A.

(63)   [Wenling considers having a fortune teller remove an allegedly unlucky mole from her face. Her brother refuses to encourage her.]
Brother:

Suí nĭ, suí nĭ!   Nà   shì   nĭ   zìgĕr-de   shìqing!
as.you.like   that   be   you   personal-ATTR   matter
'As you like! That's your own business!'
Wenling:

Xiàngmìng xiānsheng, wŏ jiù QĬNG NĬ   BĀNG WŎ   DIĂN-DIÀO.
fortune.teller mister   I   JIU ask   you   help   I   cut-off
'Mister Fortune-teller, [[THIS BEING SO]c-topic] I'm ASKING YOU TO REMOVE IT FOR ME.' (rp: 22)

Intuitively, we want to say that Wenling, by using *jiù* in (63), somehow refers back to her brother's opinion that the decision to have her mole removed is her own business. This is indicated by the small-font C-topic in the English translation, a translational hint which should not obscure the fact that no C-topic is present in Wenling's utterance. If we spell out the information-structural impact of the extra-sentential C-topic and the use of *jiù* in Wenling's turn, we would get something like *Since it is my business to decide upon having the mole removed or not, I am asking you to remove it for me, and at least one different setting is possible – say, if it had been my brother's business to make the decision – in which I would have done something else.* In other words: Wenling does not just make a decision about the little surgery (answer to the QUD *Should I ask the fortune-teller to remove my unlucky mole?*), she also ties the decision to the fact that she can decide herself (partial answering strategy to the implicit super-question *Given that there are different potential decision makers, should I have the supposedly unlucky mole removed or not?*).

There are at least two awkard aspects about this. The first problem is that I have argued above that an analysis of parametric *cái* which presupposes interaction with an implicit category is probably mistaken (see section 4.1.3 and in particular the discussion following example (13)). Now I am claiming that parametric *jiù* does precisely that: Quantify over a domain of alternative sentences in (63) that differ with respect to an implicit element such as *this being so* (namely that it is Wenling's business to decide) as opposed to some more or less specific version that is otherwise (if, for instance, her elder brother made the decision). Are both claims tenable? I think they are, because there is an important difference

between alleged covert elements interacting with *cái* on the one hand and implicit C-topics interacting with *jiù* on the other. Recall Lai's argument from section 4.1.3, which is based on the assumption that *cái* as in (13b), repeated here as (64), does not interact with SĀN(*-ge pìngguŏ*) 'THREE (apples)', but rather with an implicit temporal value in focus, and that the sentence really means 'Little Wang has only eaten three apples so far' or even 'It has taken Little Wang as long as until now to eat three apples'.

(64)   *Xiăo Wáng   cái   chī-le   SĀN-ge   pìngguŏ.*
Little Wang   CAI   eat-ASP   3-CL   apple
'Little Wang ate only THREE apples.'

I have demonstrated above (cf. section 4.1.1) that Lai's claim concerning the translation cannot be maintained. What is of interest here is the fact that (64) contextualizes readily without any further information. Other readings in which *cái* is read emphatically or aspectually may be possible (cf. sections 2.1.3 and 2.1.4), but they are not preferred. Now see what happens if we use Wenling's statement out of context.

(65)   *Wŏ   jiù   qĭng nĭ   bāng wŏ   diăn-diào.*
I   JIU   ask   you   help I   cut-off
'I'm simply asking you to remove it for me.'
'I'm only asking you to remove it for me.'

Mandarin speakers who are confronted with (65) out of context will come up with a translation that conforms to one of the two English translations of (65), but not with the reading presented in (63) above. The first version in (65) is an instance of the emphatic use type of *jiù* (see section 2.2.4), and the second version conforms to the focusing use type as mentioned in 2.2.5. The comparison of these different patterns of contextualization reveals two important things. First, (64) brings along everything that is needed to make sense of it, provided we accomodate a context or a QUD for the overt focus, and even if a reference time is relevant in some fashion in (64), the reference time must not be a focus in the sense of providing new information. Second, if we take into account that the propositional content of the C-topic argued here to be implicit in (63) ('It is Wenling's business to decide upon having the mole removed or not') is given, the implicit category is, albeit information-structurally distinguished, not new information in (63). What is new in (63) is just the fact that the propositional content of the C-topic is a restrictor of the predication in the overt part of the sentence with *jiù*. In the absence of a competing focus or C-topic preceding *jiù* in (63), this new fact may indeed be left implicit, because anything apart from the main predication that is left

implicit surely acts as a restrictor of the main predication. In short we may say: Since the content of the C-topic in (63) is given, it may be left implicit; the fact that it acts as a restrictor of the main predication in spite of its being implicit is not an unusual fact. In general, the assumption of implicit C-topics does not seem to pose insurmountable theoretical problems; on the other hand, I cannot see how foci could be left implicit. Therefore, it is justified to claim both: The implausibility of Lai's implicit-focus analysis to account for (64), and the feasibility of the implicit C-topic analysis to account for examples such as (63).

The second difficulty concerns the very nature of being implicit. Are we dealing with a phonetically empty element which is nonetheless structurally present as a constituent of (63)? Or is everything pragmatic in the sense of 'not determined by semantics proper'?

With respect to these considerations, I am in an uncomfortable position. On the one hand, I tend to be reluctant to assume covert syntactic elements or to postulate a rich specific syntax in exchange for general pragmatic or semantic principles. On the other hand, I am forced to do so in this particular case. If we say that there is a morphosyntactic mechanism at work in cases in which parametric *jiù* is used (see section 3.4), morphosyntactically relevant entities – the agreement trigger in our case – should be represented in the syntax.

Let us now turn to a second pertinent example introduced in section 2.2.1. It is repeated here as (66).

(66) [Two children are negotiating about what to play. One of them suggests to play hopscotch.]
Nǐ   bù   shì   zuì   xǐhuan   wánr tiào fángzi   ma?
you   not   be   most   like   play jump house   PRT
'Don't you like playing hopscotch most?'
Wǒmen jiù   ZÀI   ZHÈ-GE   RÉNXÍNGDÀO-HÓNG-ZHUĀN
we   JIU   at   this-CL   pavement-red-brick
SHÀNGMIÀN wánr, hǎobuhǎo?
surface   play okay
'[[THIS BEING SO]C-topic] Let's play ON THE RED SLABS OF THIS PAVEMENT, okay?' (rp: 1)

Again, the C-topic interacting with *jiù* is not an overt part of the sentence in which *jiù* is used, and the small-font C-topic in the English translation is just a hint. Out of context, the second sentence of (66) would be translated as 'Let's simply play on the red slabs of this pavement, okay?' (emphatic use of *jiù*), or as 'Let's only play on the red slabs of this pavement, okay?' (focusing use of *jiù*). The extraction of the content of the C-

topic is less straightforward this time, because it is formally nested in a question: The Mandarin equivalent of the reconstructed assertion 'You like playing hopscotch most' is *Nǐ zuì xǐhuan wánr tiào fángzi*. The explicit second sentence of (66) would then come out as in (66').

(66') *Yīnwèi nǐ   zuì   xǐhuan wánr [TIÀO FÁNGZI]C-topic, wǒmen jiù ZÀI*
since you most like   play jump house   we   JIU at
ZHÈ-GE RÉNXÍNGDÀO   HÓNGZHUĀN SHÀNGMIAN wánr, hǎobuhǎo?
this-CL pavement   red brick   surface   play okay
'Since your favourite game is [HOPSCOTCH]C-topic, let's play ON THE RED SLABS OF THIS PAVEMENT, okay?'

The QUD which can be reconstructed here is not just *Where should we play?*; it is something like *Depending on what your favourite game is, where should we play?* (66') or (66) are partial answers to this question, and alternative partial answers could be *If your favourite game were soccer, we should play on the soccer field near the school* or *If your favourite game were hide-and-seek, we should play in the park*. The use of *jiù* excludes the possibility that all alternative games could be played on the red pavement slabs, and this is surely true.

Two more attested examples which can be analyzed along the same lines are provided in (67) and (68).[16] The reader is invited to apply the above reasoning to these sentences. Note in passing that (67) is an instance of a hypothetical conditional and that such conditionals, just like hypothetical or counterfactual conditionals with *cái*, need not be specifically marked as such.

(67) [A married couple, adoptive parents of their daughter, are discussing whether they should tell their daughter about her true origin. The mother does not want to tell the truth to her daughter:]
Tā   yàoshi zhīdao   tāde   shēnshì, [...]
she   if   get.to.know   her   origin
tā   jiù   gēn   tāde   qīnfùmǔ   zǒu   la!
she   JIU   with   her   real.parents leave PRT
Wǒmen zhè   yī-shēng-de   xīn-xuè
we   this whole-CL:life-ATTR   heart-blood
bù   jiù   bái-fèi-le   ma?
not   JIU   in.vain-spend-PRF   PRT
'If she gets to know her origin, she will go away with her true parents! [[IFSHEDIDTHAT]C-topic] Wouldn't the painstaking effort of our

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[16] There are two instances of parametric *jiù* in (67). The second occurrence is the one we are interested in here.

whole life have been wasted? (rp: 16)

(68) [An active citizen has seen the traffic passing by his house grow over the years. He is concerned about the increasing number of traffic accidents.]

Yǐqián ne, yī-tiān nándé kànjiàn yī-bù kǎchē, kěshì
before PRT 1-CL:day seldom see 1-CL truck but
xiànzài bùtóng le, dàochù shì dà chēzi, jiāotōng
now different PRT everywhere be big vehicle traffic
zhìxù yě luàn. Wǒ jiù bǎ zìjǐ suǒ
develop also chaotic I JIU BA self PRT
jiàndào-de, xiě-le yī-zhāng bàogào sòng-dào xiàn
see-ATTR write-ASP 1-CL report send-to county
zhèngfǔ qu.
government there

'We rarely used to see more than a single truck in a whole day here, but now things have changed, there are big vehicles everywhere, and the traffic has become chaotic. [[THIS BEING SO]c-topic] I have written a report to the county government to tell them about what I have noticed.' (rp: 36)

(69) incorporates the findings of this section into the descriptive generalizations which cover the function of parametric *jiù*: C-topics may be implicit and still trigger the use of parametric *jiù*.

(69) a. *Jiù* is an agreement marker; the verbal background agrees with a semantically specific focus or an (implicit) C-topic.

b. Among all the possible alternatives to *jiù*-sentences whose propositions only differ with regard to the focus or the (implicit) C-topic value, the pragmatically relevant set of alternatives is considered, and it is presupposed that at least one of these alternatives is wrong, or would be wrong. One of these alternatives i s wrong in those cases in which the alternatives are not counterfactual; it w o u l d be wrong in those cases in which counterfactual alternatives are considered.

4.2.6 *Parametric* jiù, *temporality, scales, and evaluation*

The preceding extensive discussion of *jiù*-sentences that are, in one way or another, conditional or causal is likely to have evoked the impression that parametric *jiù* is mainly used in such contexts. This is not the case, and the present section will give an overview of the large diversity of scalar contexts in which *jiù* may just as well appear. The general idea will be to provide a descriptive frame first in order to assign each of the

discussed (types of) examples to one or several of these descriptive categories. It will be shown for each of these categories how the specific focus semantics relating to *jiù* interacts with the specific contextual types to yield rather diverse sentence readings. The diversity of these readings has often given rise to over-determining the function of *jiù*. I will argue in each case that *jiù*'s function should remain as economical as it is now, and that it is the context which should be held responsible for the interpretational surplus.

The examples in sections 4.2.2 through 4.2.5 display no scalar phenomena. Apart from the fact that the excluded alternative sentences should, of course, not be entailments of the asserted sentences, implicational relationships among alternatives have not mattered so far. The examples in this section invariably involve scalar alternatives. The subparameters under discussion are the following:

(i) the scalar value may be evaluated as relatively low, or no evaluation may be involved;

(ii) the scalar value may be temporal or non-temporal;

(iii) the focus value may coincide with the parametric value at which some change of state happens, or it may diverge from the parametric value at which some change of state happens.

The reader is sure to have noticed that none of these three dimensions really restricts the use of parametric *jiù*: Within each of the three dimensions, *jiù* is compatible with some value, and with its complement. Nevertheless, large portions of the literature on *jiù* centre around such matters, and that is one reason why special attention is paid to them here. Another reason is that the discussion of these matters is an opportunity to see how far our simple *jiù*-function takes us, and how much we may confidently leave to the context.

A. Evaluation and (non-)temporal contexts

I have argued in section 4.2 above that evaluational components are not invariably present in sentences with parametric *jiù*. The illustrative example (70) (=(42), but enriched with information-structural details introduced in sub-section 4.2.4) with its two contexts demonstrates this.

(70) [Context 1: Old Wang got up at six, took the bus at 6.30, and …
Context 2: Old Wang always arrives late for work. Sometimes he doesn't show up until 11 o'clock. Today was different, …]
tā ([)QĪ([)c-topic)-diǎn jiù zài bàngōngshì le.
(s)he 7 -CL:o'clock JIU at office PRT
Context 1: '…at [SEVEN]c-topic o'clock he WAS IN HIS OFFICE.'
Context 2: '…he was in his office at SEVEN o'clock already.'

Context 1 gives us an evaluational interpretation of the focus value: Old Wang was late for work. Context 2 is entirely neutral with regard to Old Wang's being late or not. A non-temporal example which serves to support the same point is (71) (cf. Biq 1988 or Lai 1999).

(71) [Context 1: Often Little Wang feels a bit hungry by eleven o'clock in the morning. In this case...
Context 2: Little Wang is not a big eater. After not eating for a day, he still does not eat very much. ...]

...	tā	chī	yī-ge	píngguǒ	jiù	bǎo.
	(s)he	eat	1-CL	apple	JIU	full

Context 1: '... he has enough after eating an apple.'
Context 2: '... after eating as little as one apple he already has enough.'

While context 2 may give the impression that the evaluational component is due to the use of *jiù*, the first context clearly contradicts this: Having an apple as a snack between two meals is neither a lot nor little, it is just about average. The examples in (70) and (71) thus show that the evaluational component of the first readings cannot be the result of a lexical property of *jiù*, no matter whether temporal or other scales are involved.

This being so, in what fashion is negated universal quantification over domains of alternatives, i.e. the focus semantics that I assume to trigger the use of *jiù*, compatible with the observed readings? Take (70) first. While *zài* 'be at' is a stative predicate, the use of sentence-final *le* signals a prior change of state which has effected the asserted resultant state (on the semantics of sentence final *le*, cf. Li et al. 1982, Shi 1990 or Lai 1999). An English version of the first reading of (70) which, at the cost of clumsiness, makes this meaning surface would be 'As early as seven o'clock, the resultant state of his being in his office had been effected'. The use of *jiù* is triggered by the fact that there was at least one point in time different from the focus value 'seven o'clock' at which the resultant state did not yet hold. Even though we do not know exactly at what time Old Wang arrived in his office on that morning, the use of *jiù* presupposes that he has not been there all night. That is exactly the reading that we want for (70).

There is, however, an interesting twist in this reasoning, because as it stands it does not merely detach evaluation from the function of *jiù*; it runs outright in the opposite direction. ¬∀-quantification excludes at least one earlier point in time, but context 2 says that Old Wang came early, and not at a later point in time. According to everything I have assumed so far, I must take the first ingredient to be a presupposed part

of the meaning of sentence (70). The evaluational component should on the other hand be an implicature. That is tantamount to saying that in each possible context of (70), some earlier point in time must be excluded, while the evaluation of the point in time 'seven o'clock' as early may be lost. The second reading of (70) confirms precisely this. Here, we are dealing with a C-topic structure as discussed in previous sections: *Qī(-diǎn)* 'seven (o'clock)' is the C-topic triggering the use of *jiù*, and the predicate following *jiù* is in focus. A rough spell-out of the information-structural effect of this is 'At seven o'clock he was in his office, and there is another point in time at which he had not yet been in his office, but somewhere else'. That is exactly what we need to match context 1, negated universal quantification over a domain of alternatives is easily traceable, and no evaluational component whatsoever is present.

Let us quickly demonstrate the same for (71). This sentence, by presupposition, excludes the possibility that Little Wang already has enough after some smaller portion, let us say, half an apple.[17] This is the impact of the special reading of the focus or C-topic interacting with *jiù*, and this impact can be demonstrated in both contexts. The sentence may, moreover, be used in contexts in which the focus value is independently considered little, and that makes it apt to appear in context 2.

The preceding discussion has helped to establish an important point: It is not just the case that no evaluational component need be present in the interpretation of focus values in *jiù*-sentences; even if evaluational readings are induced contextually, the "direction" of evaluation is independent of the "direction" of excluding alternative sentences: Old Wang in context 2 of (70) is not as late as usual, but some earlier point in time is excluded by presupposition; Little Wang does not eat as much as one might expect in a situation like the one depicted by context 1 of (71), but some smaller amount of food is excluded as being enough to make him have enough.

There is an interesting group of examples which belong in this context. The more voluminous dictionaries never fail to mention it, but apart from Paris (1981: 276) and Biq (1984: 91), researchers in Western Chinese linguistics tend to neglect it; cf. the two examples in (72) and (73) ((72) has already been presented in section 2.2.1).

(72) | Nǐ | YĪ-CÌ | jiù | mǎi | YĪBǍI-JĪN | dà | báicài [...]. |
|---|---|---|---|---|---|---|
| | you | 1-CL:time | JIU | buy | 100-CL:pound | big | cabbage |

'On A SINGLE OCCASION you are buying as much as A HUNDRED POUNDS of cabbage, [...]' (cf. hx: 346)

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[17] Higher values are trivial, and thus not considered: If one has enough after one apple, one will also have enough after eating two apples in a row.

(73) *Tā   mài   YĪ-PĪ   HUÒ, jiù zhèng-huí SĀNQIĀN-KUÀI.*
(s)he sell   1-CL:batch goods JIU earn-return 3,000-CL:MU
By selling ONE BATCH OF GOODS (s)he has made (as much as)
THREE THOUSAND KUAI.' (hx: 346; slightly adapted)

If sentences as in (72) and (73) are treated at all, the discussion concentrates on the focus value which follows *jiù*. If considered that way, the use of *jiù* is truly enigmatic; recall that there is a use type of *jiù* in which the focus must follow *jiù*, it may be translated as *only*, and with this use type the focus value is always l o w e r or s m a l l e r than some alternative value (cf. the presentation of the focusing use type in section 2.2.5). Here, a focus follows *jiù*, but its value is h i g h e r than contextually relevant alternative values. How can hearers tell the difference between sentences in which they are supposed to exclude higher values (focusing use type) from those sentences in which they are supposed to cancel lower assumptions? The answer is simple: *Jiù* in (72) and (73) does not relate to the foci following *jiù*, but rather to the focus values (or C-topics) preceding it. This can be tested: If one drops *yī-cì* 'on one occasion' and *mài yī-pī huò* 'sell one batch of goods' in (72) and (73), we get the *only*-readings of the focusing use type, and nothing else (unless the context is rich enough to allow for implicit C-topics as discussed in sub-section 4.2.5 above): 'you are only buying a hundred pounds of cabbage' and '(s)he has only made 3,000 Kuai', respectively. In this case non-parametric, focusing *jiù* really interacts with the foci following it.

We can now tell *jiù* as in (72) or (73) apart from the focusing use type of *jiù*, but how do the sentence meanings of (72) and (73) relate to the function of parametric *jiù*, i.e. reflecting negated universal quantification over domains of alternatives? Intuitively, what *jiù* in both cases is involved in is expressing that so much is done or achieved with so little. Can quantification and intuition be matched here?

For a start, it is important to see that what makes sentences such as (72) and (73) so special is the fact that the relevant focus values are inherently or contextually minimal: *yī-cì* 'a single occasion' as in (72) and *yī-pī* 'one batch' as in (73) are the smallest possible values that are either logically possible or contextually relevant. If we substitute higher values for the extreme values, we get well-behaved sentences which do not require any special scrutiny; cf. (72') and (73').

(72') *Nǐ   ÈRSHÍ-CÌ   jiù   mǎi-le   YĪBǍI-JĪN   dà   báicài.*
you 20-CL:time JIU   buy-PRF 100-CL:pound big   cabbage
'On TWENTY OCCASIONS you bought A HUNDRED POUNDS of cabbage (altogether).'

(73') *Tā   mài   SHÍ-PĪ   HUÒ, jiù zhèng-huí SĀNQIĀN-KUÀI.*
(s)he sell   X-CL:batch goods JIU earn-return 3,000-CL:MU
By selling TEN BATCHES OF GOODS (s)he has made THREE THOU-
SAND KUAI.'

Contrary to the real-world situations covered by (72) and (73), (72') and (73') are not special: Buying five pounds of cabbage each time you go to the grocer's shop is not very much if you cook for a big family; likewise, if earning 3,000 Kuai with a single batch of goods is a lot, earning the same with ten batches will be an average result, or even below average. The focus-semantics we assume to be the trigger of the use of *jiù* now says: On twenty occassions the addressee of (72') bought an accumulated hundred pounds, and it is not true of all alternative numbers of occasions that the addressee bought an accumulated hundred pounds of cabbage on these occasions. Probably, the excluded alternatives are all occasions starting from the first to the 19th, and only on the 20th occasion has our cabbage friend reached the 100-pounds limit. This need not be the case, though. In some not too realistic world in which the grocer calculates people's accumulated cabbage purchases every fifth time they buy cabbage, the limit may well have been passed on the 16th or 17th occasion, and (72') would still be a good sentence (I will return to this kind of indeterminacy in sub-section B. below). The same applies to (73'): Probably the 3,000-Kuai limit was reached in the course of selling the tenth batch, but it may also have been reached in the course of selling the eighth or ninth batch. So at least one alternative sentence with a number of batches lower than ten is false, and our focus-semantic requirements are met.

We are now in a position to understand in what respect sentences like (72') and (73') differ from sentences like (72) and (73). In (72) and (73) the lowest possible scalar values, which are in focus (or may alternatively be C-topics), relate to very high scalar values in the predicate. Minimal inputs (i.e. the narrowest possible restrictions of the predications) still yield results that are extraordinarily high. In these extreme cases the domain of quantification does not have any members which are not entailed by the asserted sentence, and which are true at the same time: 'You are buying (as much as) a hundred pounds of cabbage on zero occasions' is the only possible alternative, it is surely untrue, and the requirements for using *jiù* are thus met. The application of this reasoning to (73) is analogous: The only relevant alternative sentence would be something like the Mandarin counterpart of *By selling zero batches of goods (s)he has made 3,000 Kuai*. Again, this is untrue, and the ¬∀-component of the focus meaning is attested. I believe that no more discussion is needed to account for cases like (72) and (73) which, at the beginning, appeared to

be so puzzling. A maximum restriction that still warrants a big effect is just a special case of restrictions that warrant some effect.

B. Change of state

By now, examples with temporal and non-temporal foci or C-topics have been discussed, and we have contrasted sentences in which an evaluational component is implied with other sentences that are evaluationally neutral. Points (i) and (ii) have thus been covered, and I have been able to demonstrate that the semantic core of *jiù*-interpretations assumed here, namely negated universal quantification over domains of alternatives, is compatible with all of these cases. Item (iii) has only been alluded to in the preceding discussion: What is the relationship among the use of *jiù* and phase quantification?

Sentences denoting a change of state in the course of time are widespread. Although *jiù* is not an obligatory element in such sentences, it is still very frequent. Consider (74a) and (74b).

(74) a. *Jiějiě   likè   jìn-le   chúfáng.*
      elder.sister immediately enter-PRF kitchen
      'My elder sister entered the kitchen immediately.'

   b. *Jiějiě   LÌKÈ   jiù   jìn-le   chúfáng.*
      elder.sister immediately JIU enter-PRF kitchen
      'My elder sister entered the kitchen IMMEDIATELY.'

Both sentences basically mean the same thing, and the particular information-structure with *likè* 'immediately' in focus indicated in (74b) is also possible in the a-sentence. Still, *jiù* is not obligatory in (74a). What, then, is the impact of *jiù* in (74b)? By now, the answer is easy to give: It reflects quantification over a domain of alternative sentences and, by presupposition, excludes at least one alternative sentence as false. English versions of alternative sentences are *My elder sister entered the kitchen after five minutes* or *My elder sister entered the kitchen after two hours*. At least one of these sentences must be false; in (74b) all of them are false, because *likè* 'immediately' signals that the elder sister has entered the kitchen after the shortest possible or contextually relevant stretch of time. Note that this is still compatible with negated universal quantification over domains of alternatives: If no alternative sentence is true, not all alternative sentences are true.

But how can we tell the two kinds of quantification apart then? Would it not just as well be possible to say that *jiù* signals negated existential quantification? That we really need the less restrictive kind of quantification can be seen by studying stative lexical predicates. Sentence (75) is a good illustration of this necessity.

(75) [*WǓ-FĒN   ZHŌNG   YǏHÒU*]C-topic,
      5-CL:minute clock   after
      jiějiě   jiù   ZÀI   CHÚFÁNG   le.
      elder.sister JIU at   kitchen   PRT
      '[FIVE MINUTES LATER]C-topic, my elder sister was IN THE KITCHEN.'

The time adverbial *wǔ-fēn zhōng yǐhòu* 'five minutes later' in (75) may well refer to a point in time at which the speaker's elder sister has already been in the kitchen for one or two minutes, so the point in time at which the change of state happened (viz. the elder sister's entering the kitchen), and the point in time identified by the time adverbial do not coincide. We may thus not exclude all (contextually relevant) alternative points in time as being points in time at which the elder sister was not in the kitchen, but just some. If this is so, why, then, is the parlance of *jiù* as a marker of threshold values (Alleton 1972) or as a phase adverb (Lai 1999) so widespread? A motivation for this descriptive bias is easily found: While many sentences with *jiù* are indeterminate with respect to the coincidence of the reference time, and the time at which some change of state happens, the lexical or constructional devices assembled in (76) are among the elements to ensure interpretations of which it is true that the change of state invariably happens at a point in time that is characterized unambiguously.

(76) a. *(zì)cóng ... (yǐlái)*   'since ...'
     b. *yī* + clause/VP   'as soon as/once ...' (lit. 'one')
     c. *yī* + (event$_x$) classifier 'with/after a single x-type event'
     d *gāng*   '(after) only just'
     e. *cái* (= aspectual *cái*)   '(after) only just'
     f. *děng ...*   'when, after' (future ref.) (lit. 'wait')
     g. *yī-huìr*   '(in) a moment'
     h. *mǎshàng, likè, hěn kuài*   'immediately', 'immediately', 'very fast'

(77) provides sentences which illustrate the use of each of these elements. They have been underlined for convenience.

(77) a. *Cóng tā   shēngxiàlái,*
        since (s)he was.born
        wǒ   jiù xīnxīnkǔkǔ-de yǎng-le   tā èrshí-duō   nián.
        I   JIU painful-ADV   raise-ASP (s)he 20-more   year
        'Since she was born, I have raised her with great effort for more than twenty years.' (rp: 17)

a' *Zìcóng   tāmen   jìn   cúnzi   yǐlái,*
   since   they   enter village ever.since
   jiù   méi   yī-tiān shǐ   rén   ānníng   guò.
   JIU   not.exist 1-CL:day let   people peaceful spend
   'Ever since they entered the village, they haven't left the
   population in peace for a single day.' (ad. Alleton 1972: 153)

b. *Tā   yī   kāi   chuāng, jiù   fāxiàn tiānqì lěng-qilai le.*
   (s)he once open window JIU realize weather cold-INCH   PRT
   'As soon as he opened the window, he realized that the
   weather had become colder.' (Alleton 1972: 141)

c. *Nín   yī-yǎn   jiù   xuǎn-zhòng-le*
   you.POLITE   1-CL:glimpse JIU   select-hit-ASP
   wǒmen   zuì   guì-de   zuànshí jièzhi.
   our   most expensive-ATTR   diamond ring
   'With a single glimpse you have picked out our most expen-
   sive diamond ring.' (cf. rp: 3)

d. *Gāng   shàng   lóutí,   jiù   tīngdào*
   only.just go.up stairs JIU   hear
   yī-zhèn   hūgāohūdǐ-de   zhèngchǎo-shēng.
   1-CL:wave   now.high.now.low-ATTR   fight-sound
   'He had only just gone up the stairs when he heard the sound
   of fighting, now high, now low.' (hx: 345)

e. *Dōngxi cái   mǎi-de,   jiù   pò-le.*
   thing   only.just   buy-ATTR   JIU break-PRT
   'I've only just bought this thing, and now it's already broken.'

f. *Děng [dǔbó   jīqì]   zhuāng-hǎo   la,*
   wait gambling   machine   install-ready   PRT
   wǒ   jiù   zuò-zài zhèr shōu   qián!
   I   JIU   sit-at   here receive money
   'After [the gambling machines] have been installed, I will sit
   here and collect the money!' (rp: 47)

g. *Mā   yī-huìr   jiù   huí-lái   le.*
   mum   1-CL:moment   JIU   return-come PRT
   'Mummy will return in a moment.' (rp: 1)

h. *Wǒ   mǎshàng/lìkè/hěn kuài   jiù   qù.*
   I   immediately/immediately/very fast JIU   go
   'I'll go there immediately.'

The list in (76) is by no means complete. It merely gives an idea of the
diversity of temporal elements and constructions which make reference to
a point in time at which some change of state happens. I have not indi-
cated where the foci or C-topics in the above sentences are located, but it

should have become clear by now that the use of *jiù* presupposes some
preceding element that is distinguished from the point of view of informa-
tion-structure.

To conclude this long section, we may summarize as follows: In spite
of descriptive traditions which stress evaluational, temporal, or phase
aspects of *jiù*-sentences, it can be shown that all of these aspects only
enter the picture by way of an interaction of *jiù*'s focus semantic function
with specific contextual embeddings.

4.2.7 Markedness relations

In the course of determining the phenomena which each analysis of pa-
rametric *jiù* should cover, it was noted in section 4.2.1 that *jiù* is com-
monly analyzed as or felt to be the unmarked member in an opposition
with *cái*. The proposal defended here can easily accomodate this fact. If
parametric *cái* reflects negated existential quantification over domains of
alternatives, and if parametric *jiù* reflects negated universal quantifica-
tion over domains of alternatives, then all else being equal, sentences with
cái should entail their counterparts with *jiù*.

To see this, let us first study the purported entailment relation in the
context of normal quantification with no focus semantics involved.

(78) a. *No friend talks to me.*
      b. *Not all friends talk to me.*

(78a) entails (78b). Of course, in a situation in which no friend talks to
me I will usually abide by the Maxim of Quantity and use the more
restrictive sentence (78a) to state unequivocally that there is not even a
single friend who wants to communicate with me, but this situation is
also covered by what (78b) means: $\neg \exists x \, \varphi[x]$ entails $\neg \forall x \, \varphi[x]$.

Now consider an example in which the entailment relation concerns a
situation which is of the by now familiar focus-semantic kind.

(79) a. *MĚIJÙN LÁI-de shíhou, wǒ   cái   kāishǐ   shāo fàn.*
         Meijun come-when   I   CAI   begin   cook rice
         'I did not start cooking until MEIJUN CAME.'/
         'I only started cooking when MEIJUN CAME.'
      b. *MĚIJÙN LÁI-de shíhou, wǒ   jiù   kāishǐ   shāo fàn.*
         Meijun come-when   I   JIU   begin   cook rice
         'I started cooking when MEIJUN CAME.'

No doubt: (79a) entails (79b), and this is due to the fact that the informa-
tion-structurally distinguished categories preceding *cái* and *jiù*, viz. the
time adverbials, quantify over domains of alternatives in ways that

amount to negated existential quantification in (79a), and negated universal quantification in (79b). I will return to this kind of entailment relation in section 4.4. Our conclusion here must be that the markedness intuition shared by several authors falls out for free from the analysis proposed here, because the focus quantificational type relating to *cái* is but a special case of the focus semantic type relating to *jiù*.

4.2.8 'The jiù of twin variables'

The '*jiù* of twin variables' (cf. section 2.2.1.D) occurs in a special construction. This construction is under scrutiny in the present section, and we will check whether our account of *jiù*'s function here, too.[18]

Sentences in which the '*jiù* of twin variables' as in (80) and (81) is used have the characteristics in (82).

(80) *Nǐ xiǎng gēn shéi jiàn miàn, jiù gēn shéi jiàn miàn.*
      you want   with who meet   JIU   with who   meet
      'Meet who you want to meet.'

(81) *Zhè-ge zǐ   zìdiǎn-shang zěnme   xiě,*
      this-CL character dictionary-in   how   write
      nǐ   jiù   zěnme   xiě!
      you JIU how   write
      'Write the character as in the dictionary.'

(82) i. In a complex *jiù*-sentence made up of a subordinate clause and a following superordinate clause, two occurrences of the same *wh*-word/indefinite pronominal are distributed over the two clauses.

     ii. The *wh*-words/indefinite pronominals are interpreted as variables that are bound by a (covert) universal quantifier.

    iii. If a value assignment yields a true subordinate clause, the superordinate clause with the respective value of the variable will also be true.

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[18] I am not aware of any previous treatments of these constructions in the literature on *jiù*. Paris (1981: 286ff) cites examples of what is called the '*jiù* of twin variables' here, but she does not analyze them. Both Cheng & Huang (1996) and Lin (1996: ch. 5) discuss the semantic interpretation of so-called 'donkey anaphora' in Chinese sentences of the twin-variable type, but apart from a short consideration in Lin (1996: 208), they take no interest in the function of *jiù*. The terms 'donkey anaphora' and 'donkey sentences' make reference to the kind of examples that were first discussed in the literature to analyze such sentences: *If a farmer owns a donkey, he beats it* is the best-known example (for a selection of the considerable number of relevant references, cf. the literature cited in Cheng & Huang 1996 or Lin 1996; the origin of the whole discussion dates back to Heim 1982 and Kamp 1981, with their work, in turn, relating back to Lewis 1975).

    iv. The values of the bound variables are shared referents of the situations denoted by the superordinate and the subordinate predications.

     v. Translational equivalents in English are usually sentences with indirect or free relative clauses, i.e. relative clauses that have no (overt) constituents in the embedding clauses from which the relative clauses are dependent.[19]

(82i) is sufficiently illustrated by the underlined *wh*-words/indefinite pronominal expressions *shéi* 'who/someone' and *zěnme* 'how/in some way' in (80) and (81).[20] (82ii-iv) state that (80) and (81) are read as (80') and (81') (this amounts to Cheng & Huang's 1996 analysis).

(80') $\forall_x$ [*you want to meet* x_{HUM}] [*meet* x_{HUM}!]
      i.e. 'Meet all those people that are such that you want to meet them.'

(81') $\forall_x$ [*this character is written in an* x_{MAN}-*manner in the dictionary*] [*write this character in an* x_{MAN}-*manner!*]
      i.e. 'Write this character in accordance with all those manner specifications that are such that they are used in the dictionary.'

Apart from introducing the variable, our *wh*-words/indefinite pronominals pre-select a type of value: The variable introduced by *shéi* only ranges over human beings, and *zěnme*-variables only have manner specifications in their domain. This is captured by the subscripts in (80') and (81'). The variables are bound by the unselective universal quantifier $\forall$, the second element in the tripartite quantificational structures is the restrictor, and what amounts to the main clauses in (80) and (81), is the second argument of the quantifier structure in (80') and (81'), viz. the nuclear scope.

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[19] Cheng & Huang (1996: 158–160) argue against the idea of subsuming the construction under discussion here under the heading of correlative constructions, with a correlative construction being a kind of 'free relative clause'. Their arguments certainly show that the construction itself does not have the typical properties of relative clause constructions. It seems safe to say, however, that the quantificational properties of free relatives/correlatives are sufficiently similar to those of the Mandarin sentences discussed here to conclude that a comparable function nests in different structural environments.

[20] I will not discuss the true categorial nature of words like *shéi* or *zěnme* here. Despite the fact that they are used as question words in most contexts it is probably more adequate to classify them as indefinite expressions. For a generative treatment of this Chinese class of words in terms of polarity items cf. Cheng (1997: ch. 4); Haspelmath 1997 delivers the typology-based discussion of problems of polysemy that crop up with regard to such expressions.

If the analyses in (80') and (81') are correct, and if it is, consequently, universal quantification that plays a major role in sentences characterized by the '*jiù* of twin variables', why, then, should *jiù* be used, and even obligatorily so, in (80) and (81)?[21] Recall that my main claim concerning the interpretation of *jiù* predicts negated universal quantification over a domain of alternatives, i.e. $\neg\forall$ instead of $\forall$.

To deal with this seemingly paradoxical situation, consider (81'') next. The only difference with regard to (81) above is that in (81'') information-structural information is added: The focus preceding *jiù* is marked explicitly.

(81'') *Zhè-ge zǐ*   *ZĬDIĂN-shang zěnme xiě,*
     this-CL   character   dictionary-in   how   write
     nǐ   *jiù*   *zěnme*   *xiě!*
     you   JIU   how   write
     'Write the character as in the DICTIONARY.'

This sentence may be uttered in the context of an argument about the correct way of writing a specific Chinese character. The addressee, perhaps a foreign student, has written a character in a faulty way, and he tries to argue that he once saw it written this way in a letter from a friend. The speaker of (81'') is sick of arguing any further, and resorts to the authority of a dictionary. In this context, the complete situational meaning of (81'') can be spelled out as 'Write this character as in the dictionary, and there may be other places apart from the dictionary which are such that there, too, the character is written in a way in which you should write it, but there is at least one place, namely your friend's letter, in which the character is written in a way in which you should not write it'. This amounts to negated universal quantification over focus alternatives: Not all alternative sentences are true. This reasoning implies that the use of *jiù* in such sentences is not tied to the twin variables in any direct way. But why, then, is the use of *jiù* absolutely mandatory in sentences such as (80) or (81)? Recall that ordinary *jiù*-conditionals that have no explicit conditional markers like *rúguǒ* 'if' or *yàoshi* 'if' still yield acceptable juxtapositions in many cases; cf. (83).

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[21] There are 'twin-variable' examples in which *jiù* is not used. Those sentences all seem to be of the same kind as (i) in that they have *xiān* 'first' or some other quantifying adverb in preverbal position. This is heavily reminiscent of the generalization stated in section 3.2.1.B.

(i)   *Shéi xiān lái,*   *shéi xiān chī.* (Cheng & Huang 1996: 127)
     who   first   come   who   first   eat
     'Who comes first will eat first.'

(83)   a. *Nǐ*   *lái,*   *wǒ*   *jiù*   *qù.*
        you   come   I   JIU   go
        'If you come I will go.'
     b. *Nǐ*   *lái,*   *wǒ*   *qù.*
        you   come   I   go
        'You come, I go.'

(83b) is fine as a juxtaposition of two main clauses, although *jiù* has been dropped. The same is impossible with the '*jiù* of twin variables'. Well, not quite. We do get readings if *jiù* is dropped in (80) and (81):

(80'') *Nǐ*   *xiǎng gēn*   *shéi jiàn miàn?*   *Gēn*   *shéi*   *jiàn miàn?*
     you   want with   who meet   with   who   meet
     'Who do you want to meet? Meet who?'
(81''') *Zhè-ge zǐ*   *zǐdiǎn-shang*   *zěnme xiě? Nǐ zěnme xiě?*
     this-CL   character dictionary-in   how   write you how   write
     'How is this character written in the dictionary? How do you write it?'

As expected, subordination is lost; simultaneously the twin-variable reading disappears, as well, and we are left with two questions in which each *wh*-word/indefinite pronominal gets bound separately by a question operator. The answer to the question why *jiù* is necessary is thus evident: Unless we can construe the first clause as embedded, there is no way of having both variables bound by the same unselective quantifier, because its scope should be limited to a single main clause. *Jiù*, by way of requiring a preceding focus or C-topic in the same sentence, ensures precisely this embedding, and that makes it obligatory if we want to preserve the twin-variable reading.

Now that the function of parametric *jiù* in this kind of Mandarin "donkey"-sentences has been clarified, let us briefly apply these findings to the other examples from section 2.2.1.D. The respective survey is given in (84) through (88). The b-portions provide the semi-formal tripartite structure notations along the lines of Cheng & Huang (1996) and Lin (1996). In (84b) through (86b) I use indices to show what kinds of things x is restricted to range over depending on the *wh*-word/indefinite pronominal used in each case. In the last two examples complex *wh*-words/indefinite pronominals are used which have one of the above variable-words as a part. In these cases the indices refer to the nature of the complex expressions (e.g., although *shénme shíhou* 'what time, when' as in (87) contains the word *shénme*, which has a THING-index in (87), its variables range over points in time, therefore the variables in (87) have a TIME-index). The c-sentences, finally, spell out the presuppositions tied

to each sentence as a *jiù*-sentence, all of them relating to some obviously possible context. While going through this list for themselves, readers should keep in mind that the focus-background configurations chosen here are not the only ones possible, but, hopefully, natural ones that contextualize smoothly.

(84) a. *Tā   ÀI   mǎi   shénme, jiù   MǍI   shénme.*
           (s)he like   buy   what   JIU   buy   what
           'She will BUY what she WANTS to buy.' (cf. hx: 346)

      b. ∀ₓ [*she likes to buy* xᴛʜɪɴɢ] [*she buys* xᴛʜɪɴɢ]

      c. She will buy what she likes to buy, and there may be other things that she will buy although she doesn't like to buy them, for instance because she has to buy them, but there is at least one thing she won't buy because she doesn't like to buy it, for instance a silver tea pot.

(85) a. *Tā   XŪYÀO jǐ-ge/duōshao,   jiù NÁ   jǐ-ge/duōshao.*
           (s)he need   how.many-CL/how.much JIU take how.many-CL/how.much
           '(S)he takes as many/as much as (s)he needs.'

      b. ∀ₓ [*(S)he needs* xɴᴜᴍ/ᴀᴍᴏᴜɴᴛ *(pieces) (of something)*]
           [*(S)he takes* xɴᴜᴍ/ᴀᴍᴏᴜɴᴛ *(pieces) (of this thing)*]

      c. (S)he takes as many/much as (s)he needs, and it may be the case that (s)he even takes more than what (s)he needs, or that (s)he simply takes what (s)he wants, but there is at least one class of amounts which is such that (s)he wouldn't take them, viz. is all those amounts that are less than what (s)he needs.

(86) a. *Wǒmen DÌNGHǍO-le nǎ-tiān,   wǒ jiù   nǎ-tiān   QÙ.*
           we   decide-ASP which-day I   JIU   which-day go
           'I'll GO on the day that we have DECIDED upon.'

      b. ∀ₓ [*We have decided in favour of* xsᴏʀᴛ-*day*] [*I will go on*
           xsᴏʀᴛ-*day*]

      c. I'll go on the day that we have decided upon, and there may be days which are such that we have not made any decision concerning these days, and I might go on some of these days, as well, but there is at least one day, namely the day that we have decided against, which is such that I will not go on this day.

(87) a. *Nǐ XIǍNG shénme shihou zǒu,   jiù shénme shihou zǒu.*
           you want what time   go.away JIU what time   go.away
           '(You should) Leave when you want to leave.'

      b. ∀ₓ [*you want to leave at* xᴛɪᴍᴇ] [*you should leave at* xᴛɪᴍᴇ]

      c. You should leave when you want to leave, and there may be points in times which are such that you do not want to leave at these points in time, but you should leave at these points in

time; there is however, at least one point in time which is such that you should not leave at this point in time, namely the point in time when you don't feel like leaving.

(88) a. *Tā   ÀI   shàng nǎ-lǐ   jiù SHÀNG nǎ-lǐ.*
           (s)he like   go.up which-place JIUgo.up   which-place
           '(S)he climbs up where (s)he wants to climb up to.' (hx: 346)

      b. ∀ₓ [*she wants to climb* xᴘʟᴀᴄᴇ] [*she climbs* xᴘʟᴀᴄᴇ]

      c. She climbs up to all those places that she wants to climb up to, and there may be places which are such that she will climb up to them without having a special preference for them, but she will not climb up to a place that she hates to climb up to.

For conclusions concerning the function of parametric *jiù*, turn to section 4.6.

4.3   THE FUNCTIONS OF PARAMETRIC *DŌU* AND *YĚ*

The functions of parametric *dōu* and parametric *yě* will be dicussed in a single section. The reason for this is analogous to the related decision taken in ch. 3: Contexts in which parametric *dōu* or *yě* are used overlap heavily, and this way of presentation will save us a lot of redundancy. At the same time, we obtain better insights into the systematic make-up of the investigated area.

This section has the following parts. Section 4.3.1 will review the literature on parametric *dōu* and *yě*. In section 4.3.2 I will state my own general view of the facts; the first area of application will be *lián*/*even*-sentences. Section 4.3.3 will be devoted to the incorporation of the effects of negative polarity observed in many sentences with *dōu* or *yě*. Section 4.3.4 will deal with the most intricate task: The strings of *wh*-words/indefinite pronominals and *dōu*/*yě* which serve to express a certain kind of universal quantification (free choice), and which are not open to an analysis in terms of negative polarity, are to be assimilated to the overall function of parametric *dōu* and *yě*. How concessivity comes into play, and why this makes certain adjustments in the semantic account necessary, will be the topic of section 4.3.5. Section 4.3.5.B will point out an interesting fact about the use of *dōu* and *yě* in interaction with *jiù*. This fact will deliver strong supporting evidence both for the analysis of parametric *dōu* and *yě* to be proposed, and for the proposal made for parametric *jiù*.

4.3.1 Previous analyses of the function of parametric dōu and yě

Since the classification and the behaviour of *dōu* is a traditional topic in Chinese linguistics, the amount of literature dealing with it is vast. For this reason, I will mainly concentrate on the more recent publications, and the interested reader is referred to the more complete references in these works. The situation with *yě* is the reverse: Few publications deal with it in great detail, and *yě* is usually only randomly noted as a variant of *dōu* in the *lián...dōu*-construction or in the *wh*-word/indefinite-nominal...*dōu*-construction which expresses a certain kind of universal quantification. I will first look at the main lines of argumentation dealing with *dōu*, and then turn to *yě*.

For the discussion dealing with *dōu*, we have to step back for a moment. The average treatment of *dōu* in the literature will centre around the question whether several *dōu*'s must be distinguished, or whether all *dōu*'s can, in the end, be related to a single core meaning. By introducing three use types of *dōu* in ch. 2, I have already taken a stance in this matter. The same general conclusion, namely that what I call the parametric use of *dōu* must be considered an independent linguistic sign, is also arrived at by Alleton (1972), Sybesma (1996), Zhang N. (1997), or Zhang R. (2000). The opposite view is advocated by Shyu (1995), Lin (1996), Huang (1996), or Mok & Rose (1997). Those approaches dismissing a uniform treatment of all *dōu*'s agree upon the point that parametric *dōu* is focus-sensitive. From this position, it is but a small step to equate *dōu*'s meaning with that of English *even*. Alleton (1972), or Zhang R. (2000) claim precisely this. On the side of those researchers who propose a univocal meaning of all *dōu*'s, Mok & Rose (1997) defend the view that *dōu*'s basic meaning is that of English *even*, and that the other use types are derivative. Huang (1996) relates all uses of *dōu* to a sum-operator function, while Lin (1996) establishes a theory interpreting all occurrences of *dōu* as a distributivity operator (but Lin does not discuss *even*-sentences). I think it has become obvious from this minimal survey of the more recent proposals that in this area there is little hope of a consensus in the near future. What I can do here is the following: I will first collect the major arguments showing that it is probably misguided to try and unify everything.[22] I will then move on to recapitulate why the meaning of *even* cannot be the meaning of parametric *dōu* (pace Mok & Rose 1997, or Zhang R. 2000), and why Lin's (1996) distributivity operator or Huang's (1996) sum operator will probably not do, either.

The first three arguments against a uniform treatment of parametric *dōu* and distributive *dōu* are taken from Zhang's (1997) work; the third argument is already implicit in Alleton's (1972) study. Arguments (iv) and (v) have been taken from the established descriptive tradition; Zhang (1997) cites them from Sybesma's (1996) work. Argument (vi) is, to the best of my knowledge, Sybesma's genuine finding. Argument (vii) is mine.

(i) Parametric *dōu* is not restricted to a distributive reading (Zhang 1997): It is commonly agreed upon that distributive *dōu* (roughly: '(adverbial) *all/each*'), i.e. the *dōu* which Lin (1996), or Huang (1996) consider basic, forces a distributive reading upon the relevant plural argument (cf. (89)). This is not true of parametric *dōu* as in (90) (both examples are from Zhang 1997: 261).

(89) *Tāmen   dōu   mǎi-le   nèi-běn   shū.*
     they   all   buy-ASP   that-CL   book
     'They all bought that book.' (i.e. the number of events of buying equalled the number of people)

(90) *Lián TĀMEN   dōu   mǎi-le   nèi-běn   shū.*
     even they   DOU   buy-ASP   that-CL   book
     'Even THEY bought that book.' (collectively or distributively)

(ii) *Měi* 'every' and *dàbùfen* 'most' do not license the use of parametric *dōu* (Zhang 1997): Nominals quantified by *měi* 'every', or *dàbùfen* 'most' are taken to be prototypical triggers of the use of distributive *dōu* (example (91)). With parametric *dōu* as in (92), they must not be used within the focused nominal (cf. Zhang 1997: 262).

(91) *Měi-yī-ge/Dàbùfen   rén   dōu   mǎi-le   nèi-běn shū.*
     every-1-CL/most   person   all   buy-ASP   that-CL book
     'Everybody has/Most people have bought that book.'

(92) **Lián MĚI-YĪ-GE/DÀBÙFEN RÉN   dōu mǎi-le   nèi-běn shū.*
     even every-1-CL/most   person DOU buy-ASP   that-CL book
     intended: ??'Even EVERYONE has/MOST PEOPLE have bought that book.'

(iii) No plurality requirement for the focus interacting with parametric *dōu* (Zhang 1997): Distributive *dōu* must quantify over some at least inherently plural entity. Foci interacting with parametric *dōu* need not even be inherently plural (cf. Zhang 1997: 262f).

(93) **Tā   dōu   mǎi-le   nèi-běn   shū.*
     (s)he all   buy-ASP   that-CL   book

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[22] I am doing this in addition to the discussion in section 2.5.

only possible reading (with heavy stress on *tā* '(s)he'):
'Even (S)HE has bought that book.'

(94) Lián TĀ   dōu mǎi-le   nèi-běn   shū.
     even (s)he DOU buy-ASP that-CL   book
     'Even (S)HE has bought that book.'

(iv) Differing stress patterns (Alleton 1972, Sybesma 1996, Zhang 1997): While distributive *dōu* is often stressed, parametric *dōu* must not be stressed (stressed syllables are underlined in (95) and (96)).

(95) *Tāmen dōu lái   le.*
     they   all come PRT
     'They have ALL come.'

(96) *Lián TĀMEN dōu/*dōu lái   le.*
     even they   DOU   come PRT
     'Even THEY have come.'

(v) Parametric *dōu* and *yě* sometimes interchange freely; distributive *dōu* and *yě* never do (Alleton 1972, Sybesma 1996, Zhang 1997): Pertinent examples are given in (97) and (98). Note that while the use of *yě* instead of *dōu* is possible in (97), the sentence meaning clearly changes. This is a result of *yě* in (97b) being the focus particle *yě* (cf. section 2.4.3), and not parametric *yě*.

(97) a. *Tāmen dōu lái   le.*
        they   all come PRT
        'They have all come.'
     b. *Tāmen yě   lái   le.*
        they   also come PRT
        'They, too, have come.'

(98) *Lián TĀ   yě/dōu   lái   le.*
     even (s)he YE/DOU   come PRT
     'Even (S)HE has come.'

(vi) Preposed objects in focus must immediately precede parametric *dōu* (Sybesma 1996, Zhang 1997): There is no requirement for distributive *dōu* to be used adjacent to the plural term that is distributed over (cf. (99)). Preposed foci in sentences with parametric *dōu* must, on the other hand, be adjacent to *dōu* (if otherwise, a quantificational expression would intervene between parametric *dōu* and its interacting focus[23]) (cf. the examples in (100)).

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[23] Zhang does not restrict her generalization this way. However, *lián*-foci may well be separated from *yě* by non-quantificational words; cf. (i).

(99) a. *Tā   nèi-xiē   huāshēng dōu yǐjīng   chī-wán   le.*
        (s)he that-CL:some peanut   all already eat-finish PRT
        '(S)he's already eaten all those peanuts.'
     b. *Tā   nèi-xiē   huāshēng yǐjīng   dōu chī-wán   le.*
        (s)he that-CL:some peanut   already all eat-finish PRT
        '(S)he's already eaten all those peanuts.'

(100) a. *Tā   lián NÈI-XIĒ   HUĀSHĒNG dōu yǐjīng chī-wán le.*
         (s)he even that-CL:some peanut   DOU already eat-finish PRT
         '(S)he already even ate THOSE PEANUTS.'
      b. **Tā   lián NÈI-XIĒ   HUĀSHĒNG yǐjīng dōu chī-wán le.*
         (s)he even that-CL:some peanut   already DOU eat-finish PRT
         intended: '(S)he already even ate THOSE PEANUTS.'

(vii) Singular resumptive pronouns in *wúlùn*-sentences: The inherently plural entities distributed over by distributive *dōu* are pronominalized by plural terms (if they allow for pronominalization at all) (cf. the underlined pronouns in (101)). This contrasts with *wúlùn/no-matter*-sentences, (see section 2.3.1.E). In these sentences, resumptive main clause pronouns corresponding to the *wh*-words/indefinite pronominals of the subordinate clauses must be singular (cf. the underlined pronouns in (102)). If the *dōu* in *wúlùn*-sentences is a parametric *dōu* – and I assume this to be the case – this is not a surprise. If it were distributive *dōu*, this fact would be in need of an explanation, because the denotation of the entity triggering the use of distributive *dōu* should be (inherently) plural.

(101) *Quán bān dōu shēng bìng le, tāmen/*tā dōu lā   dùzi le.*
      whole class all fall ill   PRT they/(s)he all pull belly PRT
      'The whole class has fallen ill, they all have diarrhea.'

(102) *Wúlùn   nǐ   yàoqǐng nǎ-yī-ge   rén,*
      no.matter you invite   which-1-CL   person
      wǒ dōu huānyíng   tā/*tāmen.
      I   DOU welcome   (s)he/they
      'No matter which person you will invite, I will welcome him.'

I hope that even if not every reader subscribes to each argument, most readers are convinced now that a parametric *dōu*-word and a distributive *dōu*-word should be distinguished. This does not tell us anything positive about the function of parametric *dōu* yet. Let us thus turn to the proposed

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(i) *Lián HUĀSHĒNG   tā   yě   bù   chī.*
    even peanut   (s)he YE   not buy
    '(S)he does not even eat PEANUTS.'

With this in mind, Zhang's sixth point relates to the phenomenon already discussed in section 3.1.2.B. I will return to quantificational interveners in section 5.4.

als concerning the basic meaning or function of *dōu*. Alleton (1972), Mok & Rose (1997), Zhang R. (2000), and probably also Sybesma (1996) opt to analyze *dōu* as a word meaning 'even'. In the discussion concerned with the overall category assignment and function of parametric *cái*, *jiù*, *dōu* and *yě* in section 3.4 I have shown that this is not an attractive solution. Mandarin has good *even*-words behaving the way we expect a focus particle to behave; these words are *lián* and *shènzhì(yú)*. Since, if *lián* is used, either *dōu* or *yě* must cooccur, the even-semantics is already encoded by *lián*.[24]

Huang (1996) proposes to treat all *dōu*'s as sum operators on events. This is to say that *dōu* signals a plurality of events of a single type. Huang's analysis of Mandarin *even*-sentences attempts to apply the sum operation to the set of entailed propositions. Consider (103) taken from Huang (1996, section 3.3.1).

(103) *Lián   ZHĀNGSĀN   dōu   juān-le   yīqiān-kuài   qián.*
     even   Zhangsan   DOU   donate-ASP   1,000-CL:MU   money
     'Even ZHANGSAN donated one thousand dollars.'

Huang points out that (103) entails that somebody else has donated money.[25] She goes on to argue that the sum operation applies to the events of donating that are relevant in the context in which (103) is uttered. Although I sympathize with the idea that the use of *dōu* has something to do with the plurality of events that are implied by (103), I see no way to apply Huang's sum operation smoothly. The obstacle is the following: Huang does not pay any attention to the fact that the plurality of events that she has in mind is only given on the information-structural level. This level is, by itself, not part of the ordinary meaning of sentences (recall that researchers such as Rooth 1985 or Büring 1997 assume focus interpretations that are calculated alongside the ordinary interpretations of sentences). In other words: The plurality Huang refers to is not part of the denotation of *Zhāngsān*, or the whole of (103). This contrasts with the usual distributive cases as, for instance, in (99) or (101) where the denotations of *nèi-xiē huāshēng* 'those peanuts' and *quán cūn* 'the whole village' are (inherently) plural. Huang does not seem to explain exactly how, and on what level of interpretation, the sum op-

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[24] I am not seriously considering presenting an analysis in terms of a discontinuous morpheme here. If such an attempt were made we would, among other things, give up the option to treat the *dōu* in sequences of *wh*-words/indefinite pronominals and *dōu* on a par with the *dōu* in the *lián...dōu*-construction.

[25] Most researchers would say that (103) presupposes that somebody else has donated money. At the moment, this does not matter.

erator applies. I have to admit, though, that Huang's proposal is, among all other proposals, closest to the idea that I will elaborate on in the subsequent sections.

It has been mentioned before that parametric *yě* has received far less attention in the literature. Apart from Alleton's (1972) study, I know of no other discussion of comparable length. Her French translations of parametric *yě* are 'même, pourtant' ('even, nevertheless'). This choice is both clear-sighted and evasive. Its clear-sightedness lies in the fact that these translational options cover the distinct ranges of *even*-semantics and of concessivity. What this choice of words evades is to take a position with regard to the category question: *Même* is a focus particle, and *pourtant* is a main clause adverb relating to concessive antecedents. We have seen in section 3.4 that both of these categorizations are probably on the wrong track. What we have to keep in mind, though, is the fact that an account of the function of parametric *yě* must be liberal enough to accomodate both concessive semantics and *even*-semantics, including the semantics of *even-if*-sentences. A respect in which Alleton's results coincide with my findings is that it is justified and necessary to separate the ordinary 'also'-uses of *yě* from *yě*'s parametric uses (see the dicussion in section 2.4.3).

Huang's (1996) sum operator function for *yě* faces the same problem as her *dōu*-proposal because it is not clear to me on what level of interpretation the sum operation she assumes to be characteristic of all *yě*-uses really applies. Furthermore she does not attempt to restrict her account in any way which would allow one to predict which kinds of sum operations are the most extreme ones that can still be performed by *yě*.

If we summarize the problems discussed in this section, and the ones familiar to us from ch. 2 and section 3.3, our agenda for the elucidation of *dōu*'s and *yě*'s functions in their parametric uses should include at least the following points:

(i)   It should be demonstrated how *dōu* and *yě* come to be used in *lián*/*even*-sentences; their interchangeability should follow from the account.

(ii)   It should be demonstrated how *dōu* and *yě* come to be used in sentences involving negative polarity items in focus; their interchangeability should be derivable.

(iii) The encoding of a special kind of universal quantification by using strings of *wh*-words/indefinite pronominals and *dōu* or *yě* should be explained; again, the observed interchangeability in many contexts should be taken care of.

(iv) The use of *dōu* and *yě* in sentences with elements translating as *no matter* should be explained.

(v) *Yě*'s ability to occur both in *even(-if)*-contexts, and in concessive contexts should be derived; the fact that *dōu* is barred from concessive contexts should likewise follow from its analysis.

(vi) We ought to say something about the fact that *dōu*, as opposed to *yě*, is barred from sentences in which a focusing *jiù*-subordinator (see section 2.2.6) is used.

In the following sections I will work on these issues one by one.

4.3.2 Parametric dōu/yě and universal/existential quantification over domains of alternatives: the case of lián/even-sentences

In *lián*-sentences as in (104) *dōu* and *yě* interchange freely.

(104) a. *Wǒmen lián FÀN dōu/yě bù chī.*
        we   even rice DOU/YE not eat
        'We don't even eat RICE.'
    b. *Lián BÙZHĂNG dōu/yě huì lái.*
        even minister   DOU/YE will come
        'Even THE MINISTER will come.'

In order to account for the occurrence of *dōu* and *yě* in (104), we will have to say something about the meaning of *lián* 'even'. The semantics of *even* is a popular – albeit thorny – issue. Recent relevant publications in theoretical linguistics include Kay (1990), Barker (1991), Lycan (1991, 2001), or Krifka (1995). For Mandarin, Tsao (1989), Paris (1994, 1995), Huang (1996), Liu & Xu (1998) and Zhang R. (2000) have, among others, contributed to the discussion over the past 15 years.

In theoretical linguistics a consensus is emerging which combines the classical insights of Horn's (1969) and Fauconnier's (1975) papers with those of Kay (1990) and Krifka (1995). In Chinese linguistics Kay's work has also received attention, and most recent analyses are, in one way or another, designed in his terms.

It would be futile to review all of the theoretical and the Chinese discussion here. What I will do instead is concentrate on three points. First, I will discuss the information-structural status of *lián*-phrases in Mandarin; second, I will present the gist of Krifka's analysis which will then be put to use for our Mandarin case; third, I will discuss the theoretical value of scales of likelihood in the discussion of the semantics of *even/lián*. After this more general discussion, I will turn to *dōu* and *yě*, and show why they must be used in *lián*-sentences. The section will con-

clude with a first version of the descriptive generalizations concerning the function of parametric *dōu* and *yě*.

Lián-phrases in Mandarin have been claimed to be foci (e.g. Paris 1994), topics (Tsao 1989, Liu & Xu 1998), or neither (Zhang R. 2000). The problem with these terms is that, within Chinese linguistics, there is no received view of how these different notions should be defined. To simply say pre-theoretically that topics encode "old information", whereas foci encode "new information" does not lead anywhere. This can easily be demonstrated with the help of an English every-day example as in (105).

(105) *The shocking news had been reported to the government, but in the first couple of minutes even the Prime Minister couldn't say a word.*

In (105) the Prime Minister has been introduced into the discourse by way of mentioning the government in the preceding main clause. Still, *Prime Minister* is preceded by *even*, and most linguists would say that *Prime Minister* is a focus in (105), even though it is an established discourse referent. The terms "old" and "new" information, if understood non-relationally, are simply too imprecise to be of any use. What really matters for a semantic focus notion as, for instance, Gundel (1999) characterizes it, is not whether a discourse referent is newly introduced in the discourse, but rather whether the combination of the focus with its background constitutes new information. Thus, in (105) *In the first couple of minutes* x *couldn't say a word is the background*, and it is non-given information that inserting *the Prime Minister* for x yields a true sentence. This fact is entirely independent of the fact that in the discourse context in which it is embedded in (105), *couldn't say a word* is probably likewise non-given information. In a dynamic semantics/pragmatics this simply means that the calculation of the impact of *even* in sentence (105) cannot be successful until x *couldn't say a word* has been added to the common ground.

With this understanding of the term 'focus', the nominals following *lián* may safely be said to belong to this category. Therefore, I fully subscribe to Paris' conclusion, namely that *lián*-phrases do not encode topical or backgrounded information.[26]

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[26] Again, contrastive topics as treated in more detail in section 4.2.4, may likewise be good categories marked by *lián*. Zhang R. (2000) follows Liu & Xu's (1998) refutation of a focus analysis of *lián*-nominals. His arguments are not convincing, though. The first argument takes the incoherence of the following question-answer pair as evidence demonstrating that *lián*-phrases are bad as interrogative foci. Consider (i):

In the following discussion of Krifka's (1995) theory, I will not put any emphasis on the formal representation of his work. This amounts to a gross simplification, because Krifka's theory itself is formally explicit. The natural-language version is, however, sufficient for our purposes.

Krifka assumes that, apart from normal assertions and scalar assertions (to be treated in section 4.3.3), natural languages also have a third kind of assertion, viz. emphatic assertions. Emphatic assertions are defined in such a way that their assertion is semantically stronger than the assertion of any contextually relevant alternative assertion. More specifically, emphatic assertions are both stronger than each of the alternative assertions, and also stronger than all of the alternative assertions taken together. For illustration, let us have a closer look at one of Krifka's sentences (p. 227f), an instance of what Fauconnier (1975) has called 'quantificational superlatives'.

(106) *John would distrust ALBERT SCHWEITZER!*

Krifka claims that the emphatic assertion in (106) means the following things: '(i) John would distrust Albert Schweitzer, (ii) he would distrust each of those persons who are less trustworthy than Albert Schweitzer, and (iii) he would distrust all of the less trustworthy people taken together'. While the first assertion is truth-conditionally relevant, the other two assertions must be maintained by the speaker in order for the em-

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(i) Q: *Nǐ   lián   XiǎoLiú   dōu   bù   rènshi?*
    you   even   Little Liu   DOU   not   know
    'You don't even know LITTLE LIU?'

A: *?Bù,   wǒ   lián   XiǎoWáng   dōu   bù   rènshi.*
    no   I   even   Little Wang   DOU   not   know
    ?'No, I don't even know LITTLE WANG.'

This question-answer pair is indeed not very good, but not for the reason that *Xiǎo Wáng* is not a focus in (iA). Zhang takes the deviance of (iA) as evidence against the focal status of *lián*-phrases. Foci should be good in answers to questions, and the alleged focus is not good in the answer under discussion, therefore *lián*-phrases cannot generally be claimed to be foci, this is how the argument goes. However, (i) is a bad testing configuration, because interrogative foci are usually tested with *wh*-questions, and not with *yes/no*-questions, especially not with *yes/no*-questions that are heavily biased towards an affirmative answer, as (iQ) is. The focus of an answer to a direct *yes/no*-question is its truth-value, and therefore the infelicity of the indirect answer in (iA) does not serve any purpose in an argument against the focal status of *lián*-phrases. The second argument states that *lián*-phrases are bad as fragment answers; **lián Xiǎo Liú* 'even Little Liu', for instance, is not a grammatical utterance. This argument is not sufficient either: Fragment answers in Mandarin are generally subject to heavy restrictions, and the infelicity of fragment answers of this kind may well be attributed to a syntactic property of *lián* 'even', and not to the information-structural status of the nominals following *lián*.

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phatic assertion in (106) to be uttered felicitously, i.e. they are felicity conditions.[27] Albert Schweitzer is taken here to mark an extreme value on the scale of trustworthiness. (106) could thus be paraphrased as *John would distrust the most trustworthy person!*, and this emphatic assertion allows hearers to draw the conclusion that John would distrust anybody, because Albert Schweitzer/the most trustworthy person is semantically extremely strong: If Albert Schweitzer is distrusted, Winston Churchill will be distrusted, too. Note that while semantic strength may reflect relations of analytic entailments, it need not do so. Thus, while the sentence *I am eating carrots* analytically entails that *I am eating a kind of vegetable*, the sentence *I distrust Albert Schweitzer* does not analytically entail that *I distrust Winston Churchill*, but it will probably be semantically stronger in most situations. Semantic strength is a notion that must be valid within a common ground, but once speakers have, for instance, (tacitly) agreed upon the fact that Albert Schweitzer is the most trustworthy person in the world, the difference between logical and discourse entailments does not count anymore from the point of view of linguistics.[28] Krifka (p. 227) states that the semantic/pragmatic effect of emphatic assertions may be made more explicit by using the word *even*. (106) would therefore still mean the same if *even* were inserted to yield *John would even distrust ALBERT SCHWEITZER!* If we relate these facts to the Mandarin case, we find that this is precisely what we need. Take (107) for illustration (cf. 3.3.1).

(107) a. *Xiǎo Wáng lián JĪ-RÒU   yě/dōu   bù   chī!*
    Little Wang even chicken-meat   YE/DOU   not   eat
    'Little Wang doesn't even eat CHICKEN!'

b. *Xiǎo Wáng JĪ-RÒU   yě/dōu   bù   chī!*
    Little Wang chicken-meat   YE/DOU   not   eat
    'Little Wang doesn't even eat CHICKEN!'

c. *Xiǎo Wáng yě/*dōu bù   chī   (*lián)   JĪ-RÒU.*
    Little Wang also/DOU not   eat   even   chicken-meat
    'Little Wang does not eat CHICKEN, either.'

(107a) demonstrates how an emphatic assertion and *lián* are both used to express the fact that Little Wang does not eat chicken meat and, most

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[27] Krifka demonstrates the logical independence of the second and the third proposition. This fact is not important in our context.

[28] The difference between the two examples is, of course, derivative of the fact, that the lexical entry of *carrot* will necessarily include the information that carrots are vegetables, while the lexical entry of *Albert Schweitzer* (if he has any) may only include his trustworthiness as an accidental property.

probably, no other kind of meat, either. In the emphatic assertion (107b) the preposed object alone can express exactly the same thing, provided *jīròu* 'chicken meat' receives an accent that is strong enough. In both sentences parametric *yě* or *dōu* are used. The really interesting case is (107c). This sentence is a non-emphatic assertion, and the focus has remained *in situ*. It is not just the case that *lián* 'even' must not be used (this is due to the post-verbal position of the focus), parametric *dōu* may likewise not be used, and *yě* may be used, but only in its use as a focus particle meaning 'also'.[29] We can conclude that the use of parametric *dōu* and *yě* is confined to emphatic assertions, while the absence of *lián* 'even' is not necessarily a hint at a non-emphatic assertion (cf. (107b)). Krifka's assumption, namely that *even* just serves to make something explicit that is really given by the fact that *even* is used in emphatic assertions, is therefore supported by the Mandarin data.

We now have an idea of the impact emphatic assertions and *even*-words have on propositions. What we have not clarified yet is the function of *dōu* and *yě*. In view of the preceding discussion, and keeping in mind that the distributive use of *dōu* as illustrated in section 2.3.2 belongs in the wider domain of universal quantification, the solution I want to propose for parametric *dōu* is probably not a great surprise anymore. I think *dōu* should be analyzed as a particle indicating that a certain kind of focus precedes it; the kind of focus in this case is a *lián/even*-focus in an emphatic assertion; since (*lián/even*-foci in) emphatic assertions allow us to conclude that all the contextually relevant alternative sentences are, by virtue of their relative semantic weakness, likewise held to be true, we are dealing with universal quantification over the domain of alternatives. In accordance with the discussion in section 3.4 we are not allowed to say that *dōu* marks or induces the focus readings, it only reflects them. Our descriptive generalization may thus be stated as in (108).

(108) a. *Dōu* is an agreement marker; the verbal background agrees with a semantically specific focus.

b. Among all the possible alternatives to *dōu*-sentences that only differ with regard to the focus value, the pragmatically relevant set of alternatives is considered, and it is presupposed or entailed that all of these alternatives are true.[30]

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[29] See section 2.4.3 for discussion.

[30] The majority of researchers would say that in *even*-sentences, the truth of alternatives is presupposed, and not entailed, because the implicational facts remain stable in protases of conditional clauses. Further down, we will see that in other contexts en-

If we direct our attention to *yě*, there are two obvious candidates for an analysis of its function. We might either say that, since *yě* may interchange freely with *dōu* in emphatic assertions of the kind discussed above, *yě*'s function is identical to *dōu*'s function. Or we might say that *yě*'s function as a parametric agreement particle resembles the function of the focus particle *yě* 'also' in all the relevant respects. *Yě* 'also' as a focus particle forces a specific interpretation onto foci such that among the domain of contextually relevant alternatives to the asserted sentence at least one alternative is presupposed to be true: If I say *Fred also had A BISCUIT* I am presupposing that he has eaten something else, as well.

Which analysis is correct? From the point of view of language change the second option should be given precedence. It is not an unplausible assumption to say that the parametric use of *yě* has developed out of the focusing use of *yě*. If we adopted this option, only a re-categorization of *yě*'s function from a focus marker to a focus-agreement marker would have been required while the focus interpretations could have remained unaltered. From the point of view of the identical distribution of *dōu* and *yě* in the *lián... dōu/yě*-construction, we would probably opt for the first type of analysis which assimilates the function of parametric *yě* to that of parametric *dōu*.

Here is a way to have the cake and eat it: Universal quantification over the (non-empty) domain of alternatives entails existential quantification over the domain of alternatives, i.e. *yě*'s inherited focus semantics is trivially true in all those contexts in which parametric *dōu* may be used in emphatic assertions with *lián*-foci. Consider the example in (109).

(109) *Lǎo Lǐ   lián XĪNGQĪTIĀN dōu/yě   gōngzuò!*
      Old Li   even Sunday   DOU/YE   work
      'Old Li works even on SUNDAYS!'

(109) asserts that Old Li works on Sundays, and *lián* and the emphatic assertion type allow us to conclude that Old Li works on all other days of the week (under consideration), too. The descriptive generalization in (108) thus covers the use of *dōu* in this sentence. It is true at the same time, though, that *lián* and the emphatic assertion type of (109) allow us to conclude that Old Li also works on at least one day other than Sunday. This is the quantification type going along with *yě*'s inherited focus semantics. That is, although the inherited quantificational type of parametric *yě* is semantically weaker than that of parametric *dōu*, it is never contradictory to exchange *yě* for *dōu* in an emphatic assertion with an

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tailment is the correct notion. I will assume that entailments and presuppositions can, on some level of analysis, be treated alike.

even-focus. I think this can account for the observed interchangeability of *dōu* and *yě* without fully assimilating *yě* to *dōu*, and further support for this solution will be gained from cases discussed below in which this interchangeability does not exist (cf. section 4.3.5.B).

The first version of *yě*'s descriptive generalization is stated in (110).

(110) a. *Yě* is an agreement marker; the verbal background agrees with a semantically specific focus.
  b. Among all the possible alternatives to *yě*-sentences that only differ with regard to the focus value, the pragmatically relevant set of alternatives is considered, and it is presupposed or entailed that at least one of these alternatives is true. (to be revised)[31]

Before including sentences with negative polarity items into our analysis in the next section, I shall insert a short digression on the relationship between semantic strength and likelihood or probability.

It is common to find the following argument in the literature on *even* or equivalent words in other languages: An *even*-focus marks its focus as the most unlikely or surprising candidate to combine with the background and yield a true assertion. It is thus argued that the sentence *Even John came to the party* says that John was the least likely or most surprising person to come to the party. From the fact that the most surprising, or the least likely assertion from among all contextually relevant alternative sentences is asserted, one may conclude, the argument goes, that the alternative sentences are true as well: If even John has come, Bob, the regular party-goer, is sure to have joined the party as well.[32] I believe that this argument involves an outright fallacy, and it can easily be shown to be inadequate. Neither is the assertion of *even*-sentences restricted to unlikely situations, nor is it licit to conclude from probabilities what single cases should be like. To see that improbability is not a necessary condition of the use of *even* consider (111).

(111) *With our teacher being so friendly it was not a surprise that even JOHN passed the exam.*

This sentence states explicitly that the embedded *even*-clause does not denote a surprising situation, and still it does not have a contradictory flavour to it. As with the parallel argument concerning *cái* in section

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[31] See footnote 30.

[32] Huang (1996, section 3.3.1) presents a version of this argument in her study on *dōu*. Here is a short quote: '...the event...is the most surprising event, which entails that less surprising events of the sort have taken place'.

4.1.1, I see no theoretically defensible way of maintaining the improbability claim in view of such examples.

Provided there was a way to maintain the claim, the argument would still have to be rejected because probabilities do not usually warrant the statement of entailments. Recall that the argument says that if the most unlikely case is true, then the less likely ones will also be true. This is not ~~more~~ cogent, to say the least. Suppose the weather forecast says that the sun will probably shine tomorrow and that it is extremely unlikely that there will be thunderstorms. In the end it turns out there are thunderstorms. Am I allowed now to conclude that the sun is shining during the thunderstorm, or before it, or after it? Of course not. Likewise, if even John has come to my party, and I know that John really hates parties, can I be sure then, without checking by myself, that Bob is already around? Surely not, because Bob may be sick, or he may have gone to a different party. Probabilities can only be stated with regard to large numbers of events, and real-world probabilities are only stated because if only a single case is considered, the underlying regularity cannot be discovered. It is only with the extreme case of probabilities, namely probabilities amounting to 1 (i.e. 100% of all cases are alike), that (quasi-)entailments concerning single cases can be stated. Because of these two arguments, the direct link often claimed to hold between *even*-semantics and assumptions of probability must be discarded.[33]

In this section the interpretation of *lián/even*-foci has been tied to the interpretation of emphatic assertions as defined by Krifka (1995). Compared with the set of contextually relevant alternative assertions that only differ with regard to the focus value, emphatic assertions are semantically stronger, both with regard to each of the alternatives, and with regard to all of the alternatives taken together. This amounts to the possibility of concluding, within a given common ground, from the truth of the asserted sentence to the truth of all of the alternative sentences. This type of quantification over the domain of alternatives – universal quantification – is reflected within the verbal complex by the use of parametric *dōu*. *Dōu* may freely interchange with *yě* since the quantificational type reflected by *yě* – existential quantification over the domain of alternatives – is entailed by the quantificational type related to *dōu*. The widespread attempt to

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[33] This is not to say that there is no link at all between likelihood and *even*-semantics. Krifka (1995: 228) points out the following: If two propositions p and q can be compared in terms of semantic strength, and if p is less likely than q, then p is semantically stronger than q. Stated differently: If we know already that one proposition is semantically stronger than the other, knowing which one is more likely means knowing which one is semantically stronger.

directly relate the notion of semantic strength to the notion of probability is futile, at least if done in a straightforward way with a probability cline entailing an entailment between the ordered propositions in the domain of alternatives.

4.3.3 Parametric dōu/yě and negative polarity items

Negative polarity is a highly controversial issue in theoretical linguistics. The question how the occurrence and the licensing of expressions like *lift a finger, any* or *at all* as in *My friend didn't lift a finger to help me* or *I haven't got any time at all* is to be accounted for has given rise to debates ever since the 1960's. I have no genuine ideas of my own to contribute to the discussion, and I will follow Krifka's (1995) semantic analysis in most points. Before turning to the Mandarin case, I will give a very concise overview of the research tradition which is likewise mainly based on Krifka (1995). Readers whose main interest relates to the Mandarin data might like to skip the subsequent paragraphs. Mandarin data will be discussed in sub-sections A and B.

The problem with negative polarity items is that they may not be used in just any context, and the debate centres around the question what it is that licenses their use. For instance, *lift a finger* may not be used in the sentence *My friend lifted a finger to help me*, at least not if the same contribution of meaning is intended as in the negated sentence above. In the same vein, *I have a lot of time at all* is clearly a deviant sentence. The main dividing line between researchers dealing with the issue may be seen between the syntactic and the semantic faction. The syntax faction argues in favour of an analysis which derives the licensing of polarity items from some semantically void syntactic mechanism. Progovac's (1993, 1994) work belongs in this category because she treats the licensing of polarity items as a special case of binding. For Mandarin, Cheng (1997) clearly has a syntactic analysis in mind. The original account by Klima (1964) is probably open to both kinds of arguments, but it is presented as a syntactic account: He argues that it is, non-surprisingly, negation that licenses negative polarity items. Ladusaw (1979) shows that this analysis is not satisfactory and proposes that downward-entailing contexts license negative polarity items. The semantic notion of a downward-entailing context is characterizable as a context in which the substitution of some element by a semantically weaker element yields a semantically stronger overall expression. If you take the sentence *Every first-year student is lazy*, and use the semantically weaker expression *student* instead of *first-year student*, you get a semantically stronger overall expression: *Every student is lazy*. You have exchanged a word that is more

specific by a word that is less specific, but after the exchange, the whole sentence is true in fewer contexts than the original sentence. (Upward-entailing contexts have the opposite property: If you use *student* instead of *first-year student* in *Some first-year students are lazy*, you obtain a sentence that is less specific and therefore entailed: *Some students are lazy*). This solution was likewise shown to be insufficient (Linebarger 1980, 1987) because some contexts license negative polarity items without being clearly downward entailing. Heim (1987) defends the downward-entailment approach by making it more precise and by restricting its applicability to specific common grounds, thereby reinterpreting downward-entailing contexts as dependent on specific common grounds. Kadmon & Landman (1993) as well as Zwarts (1986, 1995) have developed two more instances of semantics-based accounts that I will not deal with here because Kadmon & Landman only deal with English *any*, and Zwarts's important insights seem to have been integrated into Krifka's theory.

A. Weak negative polarity items

The gist of Krifka's theory is to define three types of assertions, and the differing pragmatics tied to these kinds of assertions are not compatible with just any type of lexical element used to express part of these assertions. The incompatibility arises by way of systematic contradictions between what Krifka calls BFA-structures on the one side, and the pragmatics of the relevant type of assertion, on the other. Those lexemes whose BFA-structures are systematically incompatible with certain types of assertions are considered by Krifka to define the set of polarity items. Take the sentence in (112) as an example (cf. Krifka 1995: 224f).

(112) **Mary saw anything.*[34]

Anything is a negative polarity item, and Krifka assigns BFA-structures to all polarity items. BFA-structures are triples of backgrounds, foregrounds and sets of alternatives to foregrounds. (113) is Krifka's BFA-triple of *anything* (p. 219).

(113) *anything*: $\langle B, \textbf{thing}, \{P | P \subset \textbf{thing}\} \rangle$

In natural language this comes out roughly as follows: *Anything* is a lexical item with a lexical meaning (the centre part of the BFA-structure), it relates to alternative expressions of a specific type (the right-hand part), and it combines with a background to yield a proposition (the left-

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[34] The grammaticality judgement only concerns the reading that requires *anything* to be interpreted parallel to *something*.

hand part); B is a function of the syntactic position in which *anything* occurs or, from a different perspective, a place-holder for specific syntactic backgrounds; **thing** is the most general property a nominal referent must have in a given context, i.e. all the things in a context must at least allow for the ascription of the property **thing**; the right-hand part of the triple says that all alternatives to the property **thing** must be such that they are semantically stronger than **thing**, i.e. it must be true of all alternative properties that they have the property **thing** as part of their meanings.

Now we know what the BFA-structure of a polarity item is, but we do not know yet why (112) is bad. Before we can state the reason, we have to look at Krifka's treatment of the relevant type of assertion. He assumes (112) to be an instance of a scalar assertion because *anything* is a lexeme that is interpreted with respect to a scale of semantically stronger properties. Scalar assertions such as *Mary earns $2,000* usually implicate (by the Maxim of Quantity) that Mary does not earn more than $2,000, although this is, strictly speaking, not a fact that is truth-conditionally relevant. Still, Krifka defines an operator **Scal.Assert** which includes this implicature as part of its specification: In scalar assertions it is excluded that semantically stronger expressions can be used without a change in the truth value of the sentence. We can now move on to show how the deviance of (112) comes about. On the one hand, this sentence says that Mary saw something which has the property **thing** (cf. the centre element of the BFA-structure), but on the other hand, **Scal.Assert** excludes the possibility that Mary saw anything which has a property that is semantically stronger than **thing**. The problem is that what Mary saw is necessarily definable in semantically stronger terms – no thing is merely a thing whose only property is **thing** –, and all alternative properties are still properties of things (the right-hand element of the triple), but **Scal.Assert** says that Mary did not see anything with a semantically stronger property. This is a contradiction. No such problem arises with (114).

(114) *Mary didn't see anything.*

(114) says that it was not the case that Mary saw an item with the property **thing**, and **Scal.Assert** excludes the possibility that Mary saw anything more specific which is still a **thing**. No contradiction arises in this case, and that is why (114) is good.

An obvious line of attack against this account would be the following: Why do we end up with bad sentences if it is just an implicature that is in the way? Krifka gives no final answer to this criticism, but one should

keep in mind that the deviance of sentences such as (112) is clearly of a different kind than that of sentences such as *I sent a letter her*. In the case of (112) one might simply say that "a wrong word" is used, and this intuitive judgement can be made precise with the help of Krifka's solution. In sum, I think it is possible to fully defend Krifka's approach against this kind of criticism.

The two examples in (112) and (113) have illustrated the general strategy of Krifka's account, namely to demonstrate that the lexical meaning of polarity items, their prefigurate set of alternatives, and the semantics/pragmatics of assertions must converge in a way which does not lead to contradictions. Let us now discuss Krifka's treatment of those negative polarity items that are relevant in the context of this study.

Krifka, just like other researchers who have dealt with the issue, distinguishes weak and strong polarity items; the strong ones must bear a focal accent. That is why he uses the cover term 'foreground' to subsume both kinds of polarity items: Weak polarity items need not bear focal stress, and sometimes they are not even in focus. For none of the Mandarin cases will we have to make use of the option that allows for non-focal polarity items; we can therefore use the term 'focus' instead of 'foreground', but we should keep in mind that Krifka's BFA-triples are designed to cover more cases.

B. Strong negative polarity items

(115) is a sentence with a strong negative polarity item (Krifka 1995: 228).

(115) *Mary didn't get ANYTHING (AT ALL).*

Krifka claims that strong polarity items under stress such as *ANYTHING (AT ALL)* have a BFA-structure that is systematically different from the BFA-structure of weak polarity items. Here is Krifka's pre-final proposal for *ANYTHING*.

(116) *ANYTHING (AT ALL)*: $\langle$ B, **thing**, $\{P| P \subset$ **thing** $\wedge \neg min(P)\}\rangle$

The BFA-triple in (116) says that there must be a syntactic background B for *ANYTHING (AT ALL)* to combine with; what *ANYTHING (AT ALL)* denotes must have the property **thing**; the set of alternative properties to **thing** must be semantically stronger than **thing** and non-minor. The predicate 'min(or)' is the preliminary part of this BFA-structure, but just like Krifka, I will make use of it here to introduce the main idea. Krifka states that with regard to specific contexts and common grounds, minor entities can be distinguished, i.e. entities which are formally semantically stronger than **things**, but nonetheless are not considered real representa-

tives of the class of things under discussion. Krifka's example is a piece of chewing gum as a birthday present which, although something that has the property **thing**, would not be considered a realistic representative of all things that can be given as birthday presents.

To derive the meaning of strong polarity items in context, we will, moreover, have to make use of a different, though familiar type of assertion, viz. emphatic assertion. Recall that Krifkas's notion of emphatic assertions has already been introduced in the preceding section. The assertion operator **Emph.Assert** is important here because Krifka restricts the occurrence of strong polarity items to emphatic assertions. They are defined in such a way that they are both stronger than each of the alternative assertions, and also stronger than all of the alternative assertions taken together. Now what is the yield of combining a BFA-structure as in (116) with **Emph.Assert** to spell out the meaning of (115)? Let us check the argument for both conditions of **Emph.Assert** separately. The first condition is that each alternative must be semantically weaker than the asserted proposition. This is indeed the case: The proposition *Mary didn't get a **thing*** is stronger than any alternative proposition because any non-minor alternative to **thing** would still entail the property **thing** (cf. the right-hand part of the BFA-triple of *ANYTHING (AT ALL)*). The second condition states that emphatic assertions must also be stronger than all of the alternatives taken together. Again, this is so. *Mary didn't get a **thing*** excludes the possibility that Mary even got the tiniest minor **thing**, and if this is so, this is semantically stronger than all of the alternatives taken together: All alternatives are non-minor **thing**s, and even if you say that it is true of all kinds of non-minor **thing**s at the same time that Mary did not get them, it will still be stronger to say that Mary did not even get a **thing**. This is different in (117).

(117) **Mary got ANYTHING (AT ALL).*

Here, a contradiction arises in an emphatic assertion: If Mary got a **thing**, then this is not stronger than any of the alternatives, because all alternatives are non-minor **thing**s, and getting a **thing** does not mean getting a non-minor **thing**. Therefore, we get a systematic contradiction in such sentences.

Now we have everything we need to return to the Mandarin case. But before that let me try to tackle some possible objections that one may want to raise against Krifka's theory.

First, one might ask, what independent evidence is there to assume those non-minor properties? So far, we have only seen that we need them to derive a contradiction in the interpretation of sentences like (117).

Below, we will find that there are good reasons to include something of the kind of non-minor properties into an adequate analysis.

A second objection might point out that *anything* (i.e. a weak-polarity item) and *ANYTHING (AT ALL)* (i.e. a strong polarity item) are assigned different BFA-structures. Should an elegant theory not aim at treating both cases alike, and only derive the differences from the interaction of a single lexeme with different information-structures and/or types of assertions? In order to discuss this point from the right perspective, it is important to see that BFA-structures are not lexical entries. The lexical entry of *anything* is the same as that of *ANYTHING*; both entries centre around the predicate **thing** (which is, of course, itself in need of a definition). As I understand Krifka, BFA-structures are just handy ways of representing pseudo-constant properties of lexical entries in specific linguistic contexts (i.e. in assertions with specific intonation contours). It is not claimed that BFA-structures are units that must be stated as such in any part of the grammar of a language. They are more like a collection of properties that polarity items and some focused constituents must have as a consequence of the very nature of the way they are used. Therefore, it is licit to include in the BFA-structures of polarity items properties that are really derivative of their contexts. Moreover, Krifka's final solution for the difference among weak and strong polarity items will derive the difference compositionally, anyway.

C. Negative polarity items in Mandarin Chinese, and the use of parametric dōu and yě

I will now treat the different kinds of negative polarity items interacting with *dōu* or *yě*, and I will show what triggers the use of these particles. For this purpose, I will rearrange Krifka's typology of polarity items in a way that fits the Mandarin data best.

The first large class of polarity items are expressions that refer to minimal amounts such as *yī-dī* 'a drop' (sub-section D). I will call this class 'negative polarity items of quantity'. Some members of this class relax the criteria of applicability of properties, and it is in this context where the preliminary analysis of minor predicates will be restated in more satisfactory terms. A generic example is *yī-diǎn* 'a bit' if used to modify stative verbs.

The second class of negative polarity items is constituted by expressions of a general nature (sub-section E). These expressions will be dubbed 'negative polarity items of quality'. I will note that a sub-class of those sentences with occurrences of a *wh*-word/indefinite pronominal and *dōu/yě* belong in this context, and I will develop a sketchy analysis of how their overall meaning can be accounted for in a compositional way.

D. Negative polarity items of quantity

The prototypical instances of this kind of polarity item are object nominals denoting minimal amounts. Cf. the examples in (118) (some of the following examples are old examples from chs 2 and 3).

(118) a. *Tā (lián) YĪ-JÙ   HUÀ   dōu/yě shuōbuchūlai.*
          (s)he even 1-CL:speech.unit speech DOU/YE not.be.able.to.speak
          '(S)he couldn't even say A WORD.'

      b. *Tā (lián) YĪ-DĪ   jiǔ   dōu/yě   méi   hē.*
          (s)he even 1-CL:drop wine DOU/YE not.have drink
          '(S)he hasn't (even) had a DROP of wine.'/
          '(S)he hasn't had ANY wine AT ALL.' (Paris 1994: 249)

Not much theory is needed to analyze these examples, at least not if we restrict ourselves to making plausible the obligatory use of *dōu* or *yě*. The negative polarity items *yī-jù (huà)* 'one speech unit' and *yī-dī (jiǔ)* 'one drop (of wine)' are the smallest possible quantities within their respective domains, i.e. amounts of speech and amounts of alcoholic beverages consumed. It is easy to see, then, that if not even the smallest quantities were involved, no larger quantities were involved either. It is true of all relevant alternative sentences in (118) that the respective amounts of speech have not been uttered (the case of (118a)), or that the respective amounts of wine have not been drunk (the case of (118b)). Making use of Krifka's BFA-structures, we would say that the A-parts of the BFA-structures would contain only semantically stronger non-minor predicates. This is precisely the condition triggering the use of *dōu*: *dōu* is preceded by a focus, and the interpretation of the focus has it that all alternative sentences are true as well (cf. the generalization in (108)). It is likewise true that, if all alternatives are true, at least one alternative will be true. This licenses (and triggers) the use of *yě* in (118) in accordance with generalization (110). The same argument applies to the complements of frequency and duration in (119) and (120) as introduced in chs 2 and 3.

(119) *Tā (lián) YĪ-CÌ   dōu/yě méi   lái-guo.*
       (s)he even   1-CL:time DOU/YE not.have come-ASP
       '(S)he hasn't even come ONCE!'

(120) *Tā (lián) YĪ-HUÌR dōu/yě zuòbuzhù.*
       (s)he even   1-CL:moment DOU/YE unable.to.sit.still
       '(S)he can't sit still for even A SECOND!'

If someone has not even come once as in (119), she is sure not to have come twice or any other number of times, either. If someone cannot sit still for the shortest possible time interval *yī-huìr* 'one moment' as in (120), he will likewise not be able to sit still for any longer stretch of time. *Dōu* and *yě* are both triggered exactly the same way as above.

Two examples involving verbal measures specific of certain types of actions are given in (121). Semantically, we are dealing with markers of a momentaneous semelfactive *aktionsart* encoded by cognate objects, and not with true object nominals in focus.

(121) a. *Biérén   dōu shuō zhào-de   hǎo,*
          the.people all   say photograph-CSC good
          tā   YĪ-YǍN   yě/dōu bù   kàn.
          (s)he 1-CL:glimpse YE/DOU not look
          'The people all said the photograph was good, but (s)he didn't even GLIMPSE at it.' (hx: 620)

      b. *Biérén   dōu zhí   lè,*
          the.people all   continuously laugh
          tā   YĪ-XIÀO   yě/dōu bù   xiào.
          (s)he 1-CL:smile   YE/DOU not smile
          'All the others kept on laughing, but (s)he didn't even have the THE FAINTEST SMILE on her face.' (hx: 620)

The facts of semantic strength relevant for the interpretation of both sentences are again straightforward. If the person talked about in (121a) did not pay the smallest amount of visual attention to the photograph, it is entailed that he did not pay any larger amounts of attention to it: All contextually relevant alternatives, and thereby also some alternatives, are true such that the licensing conditions of using parametric *dōu* or *yě* are fulfilled. Along the same lines, (121b) entails that no stronger or more numerous signs of joy were uttered than are excluded by the assertion.

The negative polarity item of quantity *yī-diǎn(r)* 'one bit', if used to modify gradable properties in negative polarity contexts, belongs to Krifka's class of polarity items that relax the criteria of applicability. Consider (122).

(122) a. *Tā   YĪ-DIǍN   dōu/yě bù   lèi.*
          (s)he 1-CL:bit   DOU/YE not tired
          '(S)he is not tired AT ALL.'

      b. *Tā   bù   lèi.*
          (s)he not tired
          '(S)he's not tired.'

Krifka's argument concerning the interpretation of sentences as in (122a) runs as follows. There is a contrast among sentences as in (122a) and

simple negated sentences as in (122b). Somehow, the a-sentence is stricter than the b-sentence, and (122b) might be considered true in a situation in which the utterance of (122a) would be false (for instance with reference to a person who has worked for a couple of hours). To derive this difference in meaning, Krifka analyzes expressions like *at all* as elements that relax the criteria of applicability of a predicate: If somebody feels just a little bit exhausted, we might refuse to call this person tired, but the predicate *tired at all* might be appropriate to encode this minimal degree. *At all* is thus something like a marker of a negative degree of comparison. If we negate this minimal degree of being tired we arrive at a negation that is semantically stronger than the negation of the plain predicate: If one is not even tired to a minimal degree, one can surely not be called tired. Therefore, both all alternatives and the conjunction of all alternatives are semantically weaker than the asserted sentence in the translation of (122a), and the conditions restricting the use of a strong polarity item in an emphatic assertion are fulfilled. The same argument fits for *yī-diǎn* 'a bit' in (122a), and the obligatory use of *dōu* or *yě* can be explained along the by now familiar lines: Since all alternatives are entailed, *dōu* may be used; *yě* may likewise be used because universal quantification entails existential quantification.

The widening of the standard of precision assumed by Krifka to be the essence of *at all*'s contribution to predicate meanings remains the same in the derivation of the effect observed above when the meaning of *anything* as opposed to *ANYTHING AT ALL* was under discussion. Krifka's preliminary solution was to say that the domain of alternatives to *ANYTHING AT ALL* is restricted to non-minor **thing**s. *Not get anything at all as a birthday present* was therefore said to be semantically stronger than *not get anything as a birthday present*: The first version would even exclude receiving a piece of chewing gum as a present, whereas the same would not make the use of the second version impossible. We can now be more precise: It is *at all* that widens the precision standard or relaxes the criteria of applicability of the predicate **birthday present** in such a way that now even a chewing gum is contained in the class of things to which this property **birthday present** can be attributed. We shall see in sub-section E that this argument will play a major role in the explanation of certain facts involving negative polarity items of quality in Mandarin.

Another element frequently used as a negative polarity item is *zài* 'once more'. It, too, belongs in the context of differing standards of precision or criteria of applicabilty. For an overview of *zài*'s uses, cf. Alleton (1972: 99–115), or Liu (1999). What I will do here is show in what kind of context *zài* is interpreted as a strong negative polarity item in Mandarin, and

I will sketch what the general line of an analysis of the overall meaning of such utterances might look like. To see how *zài* behaves as a weak and as a strong polarity item, contrast (123a) with (123b) (for uses of *zài* as a non-core member of the set of parametric particles, cf. section 4.5).

(123) a. *Wǒ   bù   zài   qù   le.*
       I   not once.more go   PRT
       'I won't go there anymore.'

   b. *Wǒ   ZÀI   yě   bù   qù   le.*
      I   once.more YE   not go   PRT
      'I'll NEVER EVER go there again.'/
      'Not even ONCE will I go there again.' (hx: 716)

(123a) is a sentence in which *zài* is used as a weak negative polarity item, an analysis that receives some support from the fact that the sentence would be bad without the negation marker *bù*. (123b) is the stronger version of this sentence. (123a) would be fine in a context in which the speaker talks about a projected change in habits: He used to go to a gambling-house on a regular basis, and now he has decided that he must stop gambling. Two weeks later, it turns out he has gone one more time, but just for five minutes. The speaker may argue that five minutes do not count and that his old statement still holds: *I won't go there anymore*, i.e. on a regular basis or for a whole night. If two weeks ago the speaker had said (123b), his behaviour would contradict his asseveration: (123b) does not even allow for the shortest possible visit at the gambling-house, because *zài* as a strong negative polarity item relaxes the criteria of applicability of what counts as one instance of doing something. A five-minute visit already counts as 'going to the gambling-house'.

Note that *yī-diǎn(r)* 'one bit' as in (122a) is a segment that can be identified with the function of relaxing criteria of applicability. In (123b) we have no such segmental counterpart relating to the changed interpretation. I will readdress this issue below (sub-section E).

The use of *yě* is easily accounted for in (123b). *Yě* is preceded by a focalized expression, and since all alternative sentences are such that they are true, there is also at least one true alternative sentence. This licenses and triggers the use of *yě*. *Dōu*, however, may not be used in *zài*-sentences. I have not investigated this fact any further.

Having shed some light on the use of *dōu* and *yě* with negative polarity items of quantity in Mandarin, we shall now focus on negative polarity items of quality.

E. Negative polarity items of quality

The investigation of Mandarin polarity items of quality will give us the opportunity to make more explicit use of Krifka's findings as presented at the beginning of this section, and in connection with *yī-diǎnr* 'a bit'. But before turning to the more intricate cases, let us see how the simple ones can be treated. Take the sentence in (124), an old example introduced in ch. 2.

(124) *Nǐ   méi   yǒu   shàng   chuán,*
you   not   have   go.up   boat
lián   chuán-de   YǏNGZI   dōu/yě   méi   kàndào.
even   boat-ATTR   shadow   DOU/YE   not.have   see
'You've never been aboard, you haven't even seen THE SHADOW of the/a boat yet.' (ad. rp: 52)

A paraphrase of the sentence would say that the addressee of (124) does not have any experience relating to boats; (*kàndào chuán-de*) *yǐngzi* '(see the) shadow (of a/the boat)' is here used as a negative polarity item denoting the most superficial experience one may have relating to something. All possible alternatives to the meaning of this (only slightly) conventionalized negative polarity item (such as *travel on a boat* or *live on a boat*) are such that they are semantically stronger than the negative polarity item because they entail having more than just some minimal experience in this domain. The context coming along with sentence (124), viz. the first clause, displays a natural instance of an element belonging to the set of alternatives of the polarity item: *shàng chuán* 'embark' is an experience relating to boats that is semantically stronger than having the most superficial experience possible.

An example of a similar kind is given in (125).

(125) *Dédào nàme-ge hǎo chāishì, yī-SHĒNG   yě/dōu   bù kēng,*
get   such-CL good position 1-CL:sound   YE/DOU   not utter
nǐ   dào   chéndezhù qì.
you   really know.how.to.stay.calm
'You have managed to get such a good position and you don't give a SOUND, you're really good at keeping a check on your temper.' (hx: 165)

Note first that even though the sentence involves a measure construction (the negative polarity item itself is the measure word/classifier), we are not dealing with a polarity item of quantity: The conventionalized set of alternatives is not made up of larger numbers of speech sounds, but rather of representatives of the general class of more articulate stretches

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of speech than just single sounds. The negative polarity argument developed for (124) fully carries over.

Another type of sentence which may be treated here is illustrated in (126).

(126) a. *Lǎo Sōng   DÒNG   yě/dōu   bù   dòng.*
Old Song   move   YE/DOU   not   move
'Old Song doesn't even MOVE.'

b. *Tā   CHŪ   QÌ   yě/dōu   chūbushànglai.*
(s)he   go.out   breath   YE/DOU   not.manage.to.breathe
'(S)he didn't even manage to BREATHE.'

We have briefly touched upon these sentences in sections 2.3.1.D, 2.4.1.D and 3.3.1, and it was noted there that only activity verbs, and no stative verbs can enter into this verb-copying structure. One might argue that sentences as in (126) should be dealt with in the context of normal *even*-sentences as discussed in the previous sections. However, I think it is defensible to insert them here, i.e. in the context of negative polarity items of quality, and not among those of quantity. First, we know already that *even*-sentences and sentences involving negative polarity items belong closely together anyway. Second, this verb-copying structure is limited to negated contexts, i.e. Mandarin equivalents of sentences like *She can even fly!* would not be encoded in a comparable construction, but with the help of the focusing adverb *shènzhìyú* 'even' (see section 1.1). Third, and this is the most important reason, the verbs used in this construction are often conventionalized in such a way that it is hard to decide whether Old Song in (126a), for example, really did not move at all, or whether *dòng* 'move' is just used to say that Old Song did not do anything that would be significant in the context in which the sentence is uttered. The same argument applies to (126b).

Yě or *dōu* must be used in these sentences for the same reason as identified above: Not moving or not breathing is seen as entailing that one does not do anything else. Therefore, all alternatives (and trivially some alternatives) to the asserted sentence are true, and *dōu* and *yě* fulfill their known agreement function as stated in (108) and (110).

F. Negative polarity and wh-*words*

The more complicated instances of negative polarity items of quality are *wh*-words/indefinite pronominals. The complications come in through several doors. First, there is no consensus in Chinese linguistics on how the different uses of *wh*-words/indefinite pronominals in Mandarin should be classified. Second, even if researchers could agree upon analyzing a subset or all of Mandarin *wh*-words/indefinite pronominals as polarity

items, the differences between syntactic and semantic approaches remain. Cheng (1997), for instance, claims that all Mandarin *wh*-words/indefinite pronominals are polarity items, but she states this from a purely syntactic angle. What I can do here is the following: I will show why an analysis of many *wh*-words/indefinite pronominals in terms of negative polarity can probably not be evaded, I will present a sketch of a semantic account along Krifka's (1995) lines, and I will demonstrate why the use of *wh*-words/indefinite pronominals as negative polarity items of quality goes along with the obligatory use of *dōu* or *yě*. Towards the end of the sub-section, I will note other uses of *wh*-words/indefinite pronominals which are not open to an analysis as polarity items, despite the obligatory use of *dōu*. Their treatment will be deferred until we get to the following section.

Let us begin with the contrasts in (127).

(127) a. *Lǎo Lǐ   méi   mǎi   shénme.*
Old Li   not.have buy   what
'Old Li hasn't bought anything special.'

b. *Lǎo Lǐ   SHÉNME dōu/yě   méi   mǎi.*
Old Li   what   DOU/YE   not.have buy
'Old Li hasn't bought ANYTHING AT ALL.'

c. *Lǎo Lǐ   mǎi-le   shénme*(?)*
Old Li   buy-ASP   what
*'Old Li bought something.'/
'What did Old Li buy?'

Cheng (1997) translates sentences as in (127a) without the qualifying word *special*. This is not fully correct because (127a) is true in a situation in which Old Li has bought something, but nothing peculiar. Note that this interpretation is not the result of prolonged linguistic introspection; it is a widely known fact which has made its way into the average Mandarin textbook for foreigners. What counts here is the interpretive difference among (127a) and (127b) ((127c) just serves to demonstrate the question-word use of *shénme* 'what' in a context that does not license the use of polarity items as we have defined them here). This difference is highly reminiscent of the contrast between *Mary didn't get anything* and *Mary didn't get ANYTHING AT ALL* as discussed at the beginning of this section when Krifka's reasoning was introduced. The robust intuitions concerning the Mandarin sentences have been stated entirely independently of Krifka's or anybody else's theories of negative polarity. This seems to me to be good supporting evidence for Krifka's (and other people's) distinction of strong and weak polarity items, and it also shows the

cross-linguistic relevance of the interpretive differences first shown here to be relevant for English.

Recall how Krifka (1995) derives the overall meaning of sentences with strong polarity items as in (127b). *Shénme*, the *wh*-word/indefinite pronominal, would be interpreted as a nominal denoting the property **thing**, which is true of each thing. The fact that a preposed strong polarity item in focus is used has the consequence that the criteria of applying the predicate **thing** are relaxed: Things that would not count in (127a) are suddenly considered something. Suppose Old Li goes shopping to buy a big present for his wife, perhaps a diamond ring, or a fur coat. He comes home with nothing but a pair of socks. In this situation the socks would count as something in the interpretation of (127b) because the criteria of applicability of the predicate **thing** have been relaxed; therefore, this situation cannot be rendered by (127b) because even a pair of socks counts as something. Not so in (127a). If we know Old Li originally wanted to buy a big present for his wife, and only brings her socks in the end, (127a) can truthfully be uttered because the predicate **thing**, which is only applicable to costly presents in our context, does not apply to socks, and Old Li can, under the weak interpretation in (127a), be said to have bought nothing for his wife, even if he bought socks for her. (127b) is the sentence which is of interest here because *dōu* or *yě* must be used. Two things conspire to make their use mandatory: On the syntactic side, the focalized polarity item is preposed, and thereby precedes the structural position of *dōu* and *yě*; on the semantic side, the negative context ensures that any alternative predicate semantically stronger than **thing** would yield an informationally weaker sentence: If somebody has not bought anything at all, he has not bought a fur coat, either.

That much is clear and plausible, but one problem remains: Krifka's final account derives the relaxation of the criteria of applicability that is necessary to explain the different interpretations of *anything* and *ANYTHING (AT ALL)* in a compositional way: *anything* and *ANYTHING* are interpreted alike, and the difference comes in through the (implicit) use of *at all* and the semantics/pragmatics of scalar vs. emphatic assertions. In the case of (127b) I know of no extra word which could be added, and which might be claimed to equal *at all* in its function. Therefore, we are left with a slightly unsatisfactory situation: Predicates denoting gradable properties as in (122) have a word of their own to relax the criteria of applicability, viz. *yīdiǎn(r)* 'a bit', but for non-gradable properties such as **thing**, such a word does not seem to exist in Mandarin. Either we try to maintain Krifka's compositionality throughout and postulate a covert expression of the required kind in (127b), or we stick to the surface. If

the latter option is chosen, two ways are open: Either we accomodate the lexical entry of *shénme* 'what/anything' in a way which allows us to derive two different standards of precision from the entry alone, or we load the duty of distinguishing the two readings onto the differing semantics/pragmatics of assertion in (127a) vs. (127b). In this case a scalar assertion would somehow yield the reading which allows for the purchase of socks, whereas an emphatic assertion would exclude this. I will not try to solve the problem in this study.

Sentences that can be analyzed in the same fashion have been presented in section 2.4.1.F. I will not discuss them in detail here since the general design of the argument should be clear by now.[35] What I will do instead is repeat the examples, add more examples to cover most *wh*-words/indefinite pronominals of Mandarin at least once, and provide natural language paraphrases of more formal representations for each sentence. Examples (128c) and (128d) are virtually synonymous, the difference among them being the way of encoding temporal frame-settings: In (128c) the negative polarity item *shénme* 'what/some' modifies the noun *shíhou* 'time', thereby relating to a very liberal system of specification of points in time. In (128d) the points in time are encoded according to the conventionalized 12-hour system, or the 24-hour system. As regards examples (128f-h), I am not fully confident whether they really belong here or whether they are instances of *no-matter*-uses of *wh*-words to be treated in the section to follow.

(128) a. *SHÉI yě   bù   huì   guài   nǐ.*
who YE   not   will   blame   you
'NO-ONE will blame you.'/
'It is not the case that an entity which is a **person** will blame you. All alternatives to entities that could blame you would still be **persons**, so no-one will blame you.'

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[35] Depending on one's analysis, *yǒngyuǎn* 'ever' as a negative polarity item in (i) (i.e. with scope below negation) may either be analyzed as 'at any point in time', or it may be considered an existential binder of the time parameter of an eventuality (the latter option amounts to Krifka's 1995: 235ff choice for English *ever*).

(i) *Jiù   shèhuì-de   kǔ,*
old   society-ATTR   hardship
wǒ YǑNGYUǍN dōu   bù   huì   wàngjì.
I   ever   DOU   not   will   forget
'NEVER EVER will I forget the sufferings in the old society.'

At this point, I lack sufficient data to make a decision how *yǒngyuǎn* should be analyzed.

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b. *Tā   SHÉNME yě/dōu   bù   shuō.*
(s)he what   YE/DOU not   say
'(S)he doesn't say ANYTHING AT ALL.'/
'It is not the case that (s)he said something which is a **thing**. All alternatives to entities (s)he could say would still be (more specific) **things**, so (s)he does not say anything.'

c. *Lǎo Zhāng SHÉNME SHÍHOU yě/dōu méi   yǒu   gōngfu.*
Old Zhang what time   YE/DOU nothave   time
'Old Zhang NEVER EVER has time.'/
'It is not the case that Old Zhang has time at a point in time which has the property **point in time**. All alternatives at which Old Zhang might have time would still be (more specific) **points in time**, so Old Zhang does not have any time at all.'

d. *Tā   JǏ-DIǍN   yě/dōu méi   yǒu   gōngfu.*
(s)he how.many-CL:o'clock YE/DOU not   have   time
'(S)he NEVER EVER has time.'/
'(S)he does not have time at ANY POINT IN TIME.'/
It is not the case that (s)he has time at a point in time which has the property **point in time on the conventional time scale**. All alternative times at which (s)he might have time would still be (more specific) **points in time on the conventional time scale**, so (s)he does not have any time at all.

e. *[Tā]   zhěng-tiān zài jiā-lǐ,   NǍR   yě/dōu bù   qù.*
(s)he whole-day   at home-in where   YE/DOU notgo
'(S)he stays at home all day, (s)he doesn't go ANYWHERE AT ALL.' (hx: 620)
It is not the case that (s)he goes to a place that is a **place**. All alternative places (s)he might go to would still be **places**, so (s)he does not go anywhere at all.

f. *Nèi-xiē   píxié, NĚI-SHUĀNG yě   bù   héshì.*
that-CL:some   shoe which-CL:pair YE   not   fit
'Among these shoes, there's NO PAIR AT ALL that fits.'
It is not the case that, among these shoes, there is a pair which has the property of being **identifiable** and which fits. All alternatives which might fit would still be **identifiable**, so there is no pair at all that fits.

g. *Xiǎo sōngshǔ pá-de   hěn   kuài,*
little squirrel climb-CSC very   fast
yīshí   ZĚNME yě   dǎibuzhù.
momentarily how   YE   not.be.able.to.catch
'The little squirrel was climbing very fast, and for the time be-

ing there was NO WAY AT ALL to catch it.' (hx: 620)
It is not the case that the squirrel can be caught with an action
that has the property of being a **manner** of catching. All alter-
natives to ways of catching the squirrel would still be **manners**,
so the squirrel cannot be caught at all.

h. *Zhè-zhāng huàr   DUŌSHAO QIÁN   yě/dōu   mǎibudào.*
this-CL   painting how.much money YE/DOU   not.be.able.to.buy
'You cannot buy this painting at ANY PRICE.'/'No matter for
HOW MUCH MONEY, you cannot buy this painting.'
It is not the case that this painting can be bought at a price
which has the property of being **quantifiable**. All alternative
amounts of money at which the painting might be bought would
still be **quantifiable** amounts of money, so the painting cannot
be bought at all.

Before concluding this section, it is time to remember the following: I am
not claiming that all sentences with *wh*-words/indefinite pronominals
receiving some kind of universal interpretation are open to an analysis in
this vein. Just consider sentence (129).

(129) *SHÉI   dōu/*yě zhīdào   zhè-jiàn shì.*
who   DOU/YE know   this-CL   matter
'EVERYONE knows about this matter.'

There are at least two factors obviating the integration of this sentence
into the present context: (i) the ungrammaticality of *yě*, and (ii) the lack
of a context which is downward-entailing in the sense made use of by
Krifka's (1995) account of negative polarity.

The first point is not in need of a long comment: According to what we
have seen so far, it should be possible to use *yě* whenever *dōu* may be
used because the quantificational type relating to *dōu* entails the quantifi-
cational type relating to *yě*; therefore, it is not clear why *yě* cannot be
used in (129) if we suggest the same kind of analysis as proposed for the
immediately preceding cases.

The second point is not very difficult to see, either. If, for instance, we
wanted to stick to the polarity-item solution in (129), we would have to
say that there is an entity with the property **person** that knows the matter
at hand. This statement, however, is not stronger than any alternative
statement differing with regard to the subject. The opposite is true: Any
alternative subject that might be used would yield a stronger assertion.
Take, for instance, the alternative subject nominal *jiějiē* 'elder sister'.
The resulting sentence *My elder sister knows about this matter* is more
specific than *Someone knows about this matter*, with the latter being the

plain sentence meaning of (129) if we adopted the polarity-item analysis.
The same is true of any other alternative object nominal. For this analysis
to work, all alternative sentences would, however, have to be less specific
than the plain assertion, i.e. they would have to be (contextually) entailed.
With this argument in mind, the obligatory use of *dōu* in (129) becomes
outright mysterious. This mystery will be the present section's cliff-
hanger.

In this section arguments have been developed to understand the obliga-
tory use of *dōu* or *yě* in sentences with focalized polarity items. Starting
from Krifka's recent theory of polarity licensing, we have discussed two
major types of polarity items: Negative polarity items of quantity, and
negative polarity items of quality. Mandarin negative polarity items of
quantity are easily handled (sub-section D): Given the right embeddings
within the quantificational structures of assertions, maximum or mini-
mum values on scales entail all of the alternative values. *Dōu* reflects this
fact within the verbal complex because of its universal quantificational
type. *Yě*'s quantificational type (existential quantification) is entailed by
that of *dōu*, so *yě*'s use does not constitute a problem either. An impor-
tant sub-class of negative polarity items of quality (sub-section F) has
been shown to require more of a theoretical apparatus: Some, but not all,
uses of *wh*-words/indefinite pronominals can be analyzed as denoting
highly non-specific properties of referents, and Krifka's account for
strong polarity items such as *ANYTHING (AT ALL)* has proved to fit pre-
cisely these cases.

4.3.4   Parametric dōu/yě and free-choice interpretations of wh-words/ indefinite pronominals and disjunctions

This section will aim at shedding some light on uses of parametric *dōu*
and *yě* as in (130).

(130) a. *(Bùlùn)   chū shénme nántí,*
no.matter ask   what   problem
*tā   *(dōu/yě)   néng zài jìsuànjī   zhīqián xīnsuànchūlái.*
(s)he   DOU/YE can   at computer before   calculate
'No matter how difficult a problem is that you ask him/her [lit.:
'No matter what difficult question you ask him/her...'], (s)he
can calculate it faster than the computer.' (hx: 618)

b. *(Bùguǎn)   chéng   yǔ   bù   chéng,*
no.matter   succeed and   not   succeed
*nǐ   *(dōu/yě)   yào   gěi   wǒ-ge   huíhuà.*
you   DOU/YE must give   I-CL   reply

'No matter whether you're successful or not, you must give me a reply.' (hx: 618)

In both sentences we have a *no-matter*-clause as the first part of the sentence, and in the second clause *dōu* or *yě* must be used. In (130a) the first clause contains a *wh*-word/indefinite pronominal, whereas the first clause in (130b) has a disjunctive make-up without any *wh*-word/indefinite pronominal. The discussion of cases like these will proceed as follows. In sub-section A I will show first why sentences as in (130a) cannot be treated the same way as the examples in the preceding section. I will then turn to Lin's (1996) proposal and collect arguments against his analysis, which relies on insights from question semantics. My own proposal will be stated in terms of free-choice items, and I will, as far as possible, assimilate the use of *dōu* and *yě* as in (130a) to the cases previously discussed. Sentences as in (130b) with disjunctive *no-matter*-clauses will be dealt with in sub-section B. Towards the end of the section, I will mention some problems and blurry cases (sub-section C).

A. Accounting for the use of dōu *and* yě *in* wúlùn-*clauses with* wh-*words/indefinite pronominals*

For (130b) it is easy to show that this sentence does not have anything to do with polarity items. Not a single word in that sentence could be suspected to be a (negative) polarity item. (130a) is different. *Shénme* 'what/some' has in the preceding section been demonstrated to have uses as a negative polarity item. So why not analyze (130a) along the lines of the argument developed above? The answer is obvious: *Shénme* is not used in a context which licenses negative polarity items. If *shénme* were a polarity item here, the whole sentence should be just as bad as English *Mary saw anything*, or the Mandarin example (127c) in its (unavailable) non-question reading.

Lin's (1996) account of Mandarin *no-matter*-sentences is, from the point of view of semantics, the most explicit one developed so far. He starts out from the intuition that sentence (131a) expresses something like the set of sentences in (131b) (p. 72).

(131) a. *Wúlùn   nǐ   yàoqǐng shéi, wǒ dōu huānyíng   tā.*
        no matter you invite   who I   DOU welcome   (s)he
        'No matter who you invite, I will welcome him.'

    b. *If you invite John, I will welcome him.*
        If you invite Jack, I will welcome him.
        ⋮
        If you invite Mary, I will welcome her.

The speaker will welcome whoever is invited by the addressee, and the list in (131b) results from the different possibilities of assigning a referent to the person variable encoded by *shéi* 'who', depending on the universe of discourse. In Lin's theory the *wúlùn*-clause is analyzed as the generalized union over a question denotation, and the interplay of the *wúlùn*-clause and the main clause is seen as a conditional relationship: If there is someone who is such that you invite him, I will welcome him, no matter who he is.

The simplified details are as follows: Questions are, according to Hamblin's (1973) theory, analyzed as denoting the set of possible answer propositions to the question. In the situation-semantics framework à la Kratzer (1989) adopted by Lin, a proposition is identified with the set of situations in which the proposition is true. Therefore, the denotation of *nǐ yàoqǐng shéi* 'you invite who' in (131a) would be the set of sets of situations which are such that the addressee invites someone in these situations, i.e. {THE SET OF SITUATIONS IN WHICH THE ADDRESSEE INVITES JOHN, THE SET OF SITUATIONS IN WHICH THE ADDRESSEE INVITES JACK, ..., THE SET OF SITUATIONS IN WHICH THE ADDRESSEE INVITES MARY}, depending, of course, on who is inside the universe of discourse. *Wúlùn* (and likewise *bùlùn*, *wúguǎn* or *bùguǎn*) is said by Lin to form the generalized union over this set of sets of situations, and the resulting set is the set of situations in which the addressee invites someone. This, combined with the main clause, gives us *I will welcome whoever you invite*.

According to Lin, *dōu*'s function in the main clause is the same as in its distributive use. Consider the old example of this use from section 2.3.2 again:

(132) *Tāmen dōu mǎi-le   yī-bù chēzi.*
       they   all buy-ASP 1-CL   car
       'They all bought a car.'

Dōu as in (132) distributes over a(n inherently) plural entity in such a way that the predication is true of each atomic sub-part of the plural entity. Therefore, (132) does not have a reading in which a single car was bought collectively. The number of individuals included in the denotation of *tāmen* 'they' in a given context must equal the number of cars purchased. Just as *dōu* in this example distributes over individuals, Lin (p. 77f) claims that *dōu* in (131a) distributes over the set of situations in the generalized union corresponding to the denotation of the *wúlùn*-clause. *Dōu*'s contribution would thus be to signal that every single situation in which the addressee invites someone is such that the speaker will welcome this person.

This summary of Lin's proposal is certainly very short and also very crude, but I hope it gives readers of the present study an idea of what Lin is aiming at. I also hope that it is sufficiently detailed to understand the difficulties that it faces if confronted with certain facts. I have found one class of facts which obstruct Lin's way of accounting for the use of *no-matter*-expressions, and their interplay with *dōu*. The argument takes as a starting point the interchangeability of *yě* and *dōu*, and the nature of the expressions these words relate to; it then moves on to show that its empirical consequences do not allow us to treat *dōu* in *no-matter*-sentences as distributive *dōu*.

The first difficulty arises if we recall that, as witnessed by (130), *dōu* and *yě* may freely interchange in many sentences with *no-matter*-expressions. I take it for granted that *yě*, in all of its focus-sensitive functions, has something to do with quantification over domains of contextually given alternatives. If this is so, its (partial) variant *dōu* should do the same thing. Lin's analysis, however, takes the set of possible answers to the question-complement of *wúlùn* as part of the denotation of a *wúlùn*-sentence. Denotations are something like the semantic content of linguistic expressions irrespective of context, whereas alternatives as related to by focus semantics always make reference to contextually delimited sets of propositions which are not part of the denotation (cf. also the discussion on 'ordinary meanings' as opposed to 'focus meanings' in section 4.2.4). Lin needs a plural denotation of *wúlùn*-clauses in order for his *dōu*-explanation to work, because distributive *dōu* relates to plural entities within the denotation. Parametric *dōu* as treated in this study relates to a set of contextually given alternatives. If it can be shown that the complements of *wúlùn* 'no matter' do not denote plural entities, but only contextually relate to sets of alternatives, we have shown that *dōu* in *wúlùn*-sentences is of the parametric type, and not of the distributive type.

Crucial evidence is delivered by the sentence in (133).[36]

(133) *Wúlùn   shéi   dōu   xīhuān   tā-zìjǐ/*tāmen-zìjǐ.*
      no.matter who   DOU   like   (s)he-self/they-self
      'No matter who(, everybody) likes himself.'

This sentence combines a *wúlùn*-expression with reflexivity. Reflexive pronouns in Mandarin are good diagnostics for testing whether the antecedent of the reflexive is a plural entity or not, because distinct expres-

sions for plural or singular (human) antecedents are used. In (123) only the singular reflexive expression may be used, and this is strong evidence against Lin's analysis of denotationally plural *wúlùn*-complements.

What may be a bit irritating in our context is the fact that *wúlùn* 'no matter' in (133) does not take a clausal complement, but a nominal one. So far, we have only dealt with complex *wúlùn*-sentences. Sentences with non-clausal *wúlùn*-complements are nothing peculiar though, and I would opt, together with Lin, for an overarching analysis.[37] The reason why I have not made use of any sentences with nominal *wúlùn*-complements so far is simple: *Wúlùn* may generally be dropped, but the sentence meaning may remain the same, i.e. the sentence in (133) would still mean the same even if *wúlùn* were not used. But then the sentence looks a lot like the type of sentence discussed in the preceding section, i.e. as a sentence with negative-polarity *shéi*. Negative-polarity *shéi* would, however, not be licensed in (133) because the sentential context is not of the required kind. In order to avoid this confusion, I have taken complex *wúlùn*-sentences as the starting point for the dicussion of *wúlùn*-sentences.

Now it is about time to deal with the relationship among simplex *wúlùn*-sentences, and sentences involving *wh*-words/indefinite pronominals used as negative polarity items. In the course of this discussion we will arrive at a statement of the meaning that I would like to assign to *wh*-words/indefinite pronominals in *wúlùn*-sentences. To get a handle on the problem, consider (134) first.

(134) a. *Xiǎo Wáng wúlùn   shénme dōu/yě   bù   chī.*
         Little Wang no.matter what   DOU/YE not   eat
         'No matter what, Little Wang doesn't eat it.'
      b. *Xiǎo Wáng   shénme dōu/yě   bù   chī.*
         Little Wang   what   DOU/YE not   eat
         'Little Wang doesn't eat anything at all.'
         ('No matter what, Little Wang doesn't eat it.')

(134a) is a *wúlùn*-sentence in which *wúlùn* takes only a nominal as its complement. (134b) is identical to (134a), except for the fact that *wúlùn* is not used. The first translation of (134b) is in line with what we know from the preceding section: *Shénme* is interpreted as a strong negative polarity item, and the whole sentence says that if Little Wang has eaten

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[36] This argument has, with a different kind of example, been used before (section 4.3.1, ex. (102)) in connection with the argument against treating parametric *dōu* in general as a variant of distributive *dōu*.

[37] Lin proposes to take a set of sets of humans as the denotation of *shéi* 'who/someone' in simple *wúlùn*-sentences. Individuals are treated as singleton sets, so the set of sets of humans is the set of sets of individuals. The generalized union over the denotation of *shéi* then amounts to the set containing all humans within a given universe of discourse.

anything, at least it was not anything with the property **thing**, and therefore, Little Wang has not eaten anything at all, because all edible items are **thing**s. But (134b) has a second translation, and this translation equals that of (134a) – it has already been mentioned above that *wúlùn*-words may be dropped. Even though it would be difficult to find a situation in which the first reading of (134b) is true and the second one false, or vice versa, I claim that the two readings differ, and the interpretation of *shénme* is where they differ crucially: *Wh*-words in sentences such as (134b) may be interpreted as strong polarity items or as free-choice items.

As a polarity item, *shénme* denotes the property **thing** which is attributed to some referent and which is true of all things. I claim that as a free-choice item, *shénme* is an expression which is open to denote any freely chosen single nominal value of the appropriate kind, and for the truth-value of the whole assertion it does not make a difference which value from the universe of discourse or the common ground is chosen. In (134a) and in the second reading of (134b) *shénme* is free to be interpreted as *fàn* 'rice', or *miànbāo* 'bread', or *miàntiáo* 'noodles', or whatever may be salient in the relevant discourse. The important thing is that any value can be chosen, but only a single one. Therefore, the denotation of the *wh*-word/indefinite pronominal in *wúlùn*-sentences is singular, and the facts of pronominalization in reflexive sentences such as (133) (or (102) above) can be derived. On the other hand, the fact that speakers and hearers are free to assign whichever specific single value or specification to the variable with no change in the truth-value amounts to a kind of indirect universal quantification: If I am free to think of a kind of edible item, and I can, no matter which one I choose, be sure that this kind is one which Little Wang does not eat, then I know that Little Wang does not eat anything.

The important fact about this proposal is the nature of the domain of quantification. It is not given by way of the denotation of the question word *shénme* 'what' as in Lin's proposal, but rather by way of the contextual alternatives relating to the one kind of edible item present in the interpretation of free-choice *shénme* 'something'. Stated in terms of the illustration in (131b), we would say that only one of the sentences, say the first one, is asserted, whereas the others are entailed to be true, because the *wúlùn*-interpretation makes it clear that the second or any other sentence might just as well have been chosen for the assertion.[38]

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[38] Note that entailment, as opposed to presupposition, is probably the correct notion here (cf. footnote 30).

In this way, the use of parametric *dōu* falls perfectly into place: Quantification over the domain of contextually relevant alternative sentences is involved, and all alternative sentences are true. *Dōu* does not induce this interpretation, it only reflects it within the verbal complex. The universal interpretation is derivative of the fact that the asserted proposition with a randomly chosen value of *shénme* 'what' is true and that, if another value had been chosen, the propostion would likewise have been true. I assume that a formal implementation of this argument is indeed possible, but I will not attempt it here.

For the sake of completeness, it must be added that, as first noted by Lin (1996: 89f) for Chinese, *wúlùn*-phrases are only good in intensional constructions. (For English, this generalization dates back to Vendler 1967). Cf. Lin's bad extensional examples in (135).

(135) a. **Shéi dōu zài chàng gē.*
       who   DOU ASP   sing   song
       intended: 'Everyone is singing.'

    b. **Shéi dōu zài nà-ge fángjiān-lǐ.*
       who   DOU be.at that-CL   room-in
       intended: 'Everyone is in that room.'

    c. **Shéi dōu yǐjīng líkāi-le.*
       who   DOU already   leave-ASP
       intended: 'Everyone has left already.'

Lin's tentative explanation of this behaviour makes reference to the denotational nature of the elements that (implicit) *wúlùn* combines with: Possible answers in complex *wúlùn*-sentences, and possible individuals in simple *wúlùn*-sentences. Since I have decided in favour of a different semantics for *wúlùn*-complements (variables in *wh*-words/indefinite pronominals in *wúlùn*-sentences are assigned an individual, albeit freely chosen, value from the domain of possible values), a slightly different story would have to be told here. It would lead us too far afield to enter deep enough into the intricacies of intensional vs. extensional constructions to restate Lin's generalization in a proper way, so I will leave its statement to a different occasion. This appears to be licit, since Lin does not develop an explicit proposal to deal with the problem, either.

Before turning to sentences with disjunctive *wúlùn*-complements I would, by way of a short digression, like to pay attention to a class of sentences that Lin makes use of to illustrate an alleged ambiguity in the interpretation of *wúlùn*-sentences with *wh*-words/indefinite pronominals. (136) presents two examples put forward by Lin (adapted from pp 81, 88) to make his point.

(136) a. *Wúlùn   nǐ yào shénme, wǒ dōu kěyǐ gěi   nǐ   mǎi.*
      no.matter you want what   I DOU can   for   you buy
      'No matter what you want, I can buy it for you.'

    b. [*A: Qǐng nǐ   gěi wǒ   yì-tiáo yú,   hǎo ma?*
        ask you give I   1-CL fish good PRT
        'Would you please give me a fish?'

      B: Nǐ   yào nǎ-yi-tiáo?
        you want which-1-CL
        'Which one do you want?']

      A: Wúlùn   nǎ-yi-tiáo   dōu xíng.
        no.matter which-1-CL   DOU fine
        'Any fish will do.'

Lin claims that (136a) is ambiguous, with one reading having it that it is required that ten out of ten things that the addressee likes are bought, and with the other reading allowing for the purchase of only one item out of the ten things the addressee likes. This ambiguity is like the one in *Any guest can come in*, Lin states, because this sentence may likewise either mean that all persons or, in a sufficiently rich context, just one person can come in. Lin welcomes the felicity of the question-answer sequence in (136b) as additional evidence for the same claim: A's last statement does not say that he wants to buy all the fish present in the situation, but just a single one, and this holds true despite the presence of *wúlùn*.

I am convinced that the assumption of such an ambiguity for the Mandarin sentences is misguided. In a footnote Lin himself (p. 83) notes down the intuition that the modal *kěyǐ* 'can' as in (136a) seems to play a role in the emergence of the alleged ambiguity, but he does not pay any closer attention to this impression. I believe that the use of *kěyǐ* 'can' and *xíng* 'okay, be possible' is the key to an understanding of why both examples are good in situations in which only single items are bought. The crucial role played by *kěyǐ* 'can' and *xíng* 'okay, be possible' is their modalizing force: If somebody can buy something for me, no matter what it is, she need not buy anything for me, but she might also buy something or everything. That means that the number of items actually purchased in the situation(s) denoted by (136a) does not matter at all. What does matter is the fact that all the things the addressee could possibly want are among the things that the speaker can buy for the addresssee. Similarly, in (136b). If we paraphrase the sentence as *No matter which fish, it is a possible fish for me to buy*, no need exists to buy a single fish, but the purchase of one fish, or even all fish, is possible. Every single one of the things that the addressee wants is also a thing that the speaker can buy for him, and *dōu* reflects the fact that all alternative assertions with an-

other item to be bought are also true. All of this is in the realm of the virtual, and this is how Lin's alleged ambiguity comes about. The purported ambiguity clearly depends on the use of a modal expression. Consider (136').

(136') *Wúlùn   nǐ   yào   shénme, wǒ   dōu gěi   nǐ   mǎi.*
      no.matter you want what   I   DOU for   you buy
      'No matter what you want, I'll buy it for you.'

Apart from the missing modal, this sentence equals (136a). It is true in different kinds of situations, depending on how many things the addressee wants. But one of its truth-conditions is that the speaker must buy at least as many things as the addressee wants. Since in this sentence items wanted, and items that are actually bought must coincide due to the lack of the modal, the truth-conditions of this sentence are more obvious than the ones of (136a) in which the domain of the possible opposes the domain of the actual. I think it is clear by now that none of the sentences in (136) and (136') is ambiguous, and that the feeling of ambiguity one may have if meditating on the meaning of (136) is a one-hundred percent consequence of the reference to (possibly many different) possible worlds quantified over by the modal.

B. Accounting for the use of dōu *and* yě *in* wúlùn-*sentences with disjunctive embeddings*

Apart from *wh*-words/indefinite pronominals, there is one more class of expressions typically used in Mandarin questions that have uses in *wúlùn*-sentences, and do not result in utterances with interrogative force. One of the Mandarin constructions for expressing *yes/no*-questions may just as well serve as the complement of *wúlùn* (*bùlùn, wúguǎn, bùguǎn* etc.). Unless the sentence final particle *ma* is used, Mandarin *yes/no*-questions are formed by using the A-*not*-A-question construction. Examples of a particle question, and of a disjunctive A-*not*-A-question are given in (137).

(137) a. *Nǐ   qù   ma?*
      you go   PRT
      'Are you going?'/'You are going?'

    b. *Nǐ   qù   bu   qù?*
      you go   not go
      'Are you going?'

Particle questions as in (137a) are often biased towards a positive answer, whereas A-not-A-questions as in (137b) are neutral in this respect. A-not-A-questions are also called 'disjunctive' because they have the

make-up of (juxtaposed) disjunctions: The act of answering a disjunctive question amounts to a choice among the positive and the negative predicate in the question.

Now consider a pertinent *wúlùn*-example (the bracketing in (138) just serves to separate the matrix subject from the embedded clause).[39]

(138) *Tā [bùguǎn xià bu xià yǔ] dōu/yě huì lái.*
   (s)he no.matter fall not fall rain DOU/YE will come
   '(S)he will come, no matter whether it's raining (or not).'
   (ad. Eifring 1995: 32)

Since the Mandarin structure resembles those in other languages to such a great extent, the intuitive understanding of this construction does not constitute much of a problem. In our context we are, however, obliged to say something about the use of *dōu* and *yě*. Specifically, does (138), in the end, not look like a case in which *dōu/yě* reflects facts of quantification over a plural entity within the denotation of the sentence? Both alternatives are encoded in (138), and *dōu* might simply be seen as distributing over both cases of the inherently plural disjunctive entity, thereby forcing us to assume that *dōu* is of the distributive, and not of the parametric kind in this sentence. Recall that all other occurrences of parametric *dōu* and *yě* have so far been analyzed as relating to contextually given alternatives, but here the alternatives are spelled out overtly.

This argument can easily be discarded. In (138) the disjunctive embedding does not mean that both disjuncts are interpreted alike. It is the very nature of disjunctions, or of complex propositions in which the propositions are related by an exclusive OR-operator to be true if one of the disjuncts is true, but never if both disjuncts are true or both are false. As with the examples in the preceding sub-section, hearers of sentence (138) are free to choose either possibility (either a situation in which it is raining, or a situation in which it is not raining, i.e. only one at a time), and the truth value of the whole sentence will not depend on this. Therefore, the alternative related to by *dōu* is only given contextually. The way the *bùguǎn*-clause in (138) interacts with the rest of the sentence is as follows: If the speaker assigns a truth value α to the proposition *It is raining* with α ranging over the values *true* and *false*, then the whole sentence gets true, but if the alternative were/had been chosen, i.e. if the truth value were/had been $\neg\alpha$, the sentence would likewise be/have been true. Again, a free-choice interpretation is involved, but this time the choice is not from among a set of nominal values as, for

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[39] The fact that *bùguǎn* instead of *wúlùn* is used in this example is insignificant. For a survey of *wúlùn*-words in Mandarin cf. Eifring (1995: part one, V).

instance, with *shéi* 'who' in (131); the free choice here is among truth values.

Since the total number of alternatives is only 1 (unless we count the chosen value as being also a member of the set of alternatives), the possible use of *yě* instead of *dōu* in (138) is accounted for most easily. In this extreme case the results of universal and of existential quantification over the domain of alternatives coincide: It is both true that some alternative is true, and that all alternatives are true.

More examples of the same kind have been assembled in (139) ((139a) = (130b)).

(139) a. *Bùguǎn chéng yǔ bù chéng,*
      no.matter succed and not succeed
      nǐ dōu/yě yào gěi wǒ-ge huíhuà.
      you DOU/YE must give I-CL reply
      'No matter whether you're successful or not, you must give me a reply.' (ad. hx: 618)

   b. *Bùlùn báitiān wǎnshàng,*
      no.matter day-time evening
      tā dōu/yě yào diǎn-zhe yóu-dēng.
      (s)he DOU/YE want ignite-ASP oil-lamp
      'No matter whether it is during the day or in the evening, he always wants to keep the oil lamp burning.' (cf. Alleton 1972: 65)

   c. *Bùguǎn tā qù bu qù, nǐ dōu/yě huì qù ma?*
      no.matter (s)he go not go you DOU/YE will go PRT
      'Will you go, no matter whether (s)he's going or not?'
      (adapted from Eifring 1995: 44)

   d. *Rènpíng tā guā fēng xià yǔ,*
      no.matter it blow wind fall rain
      dōu/yě zǔdǎngbuzhù wǒmen qiánjìn-de bùfá.
      DOU/YE unable.to.stop we advance-ATTR pace
      'No matter whether the wind blows or the rain falls, it won't stop us from forging ahead.' (cf. Eifring 1995: 176)

I see no obstacles to an application of the above analysis to these sentences.

C. Remaining issues

Let us now turn briefly to some problems which I have not been able to solve or which require a more explicit future treatment.

Readers may have noticed that I have remained silent about the information-structural status of (the components of) *wúlùn*-complements. There is a reason for this. So far, all categories interacting with paramet-

ric *cái*, *jiù*, *dōu* or *yě* could plausibly be shown to be foci, or at least C(ontrastive)-topics. These notions are not easily integrated into the present argument, because the *wh*-word/indefinite pronominals, and the disjunctions in *wúlùn*-complements do not straightforwardly denote values with regard to which alternative values could be considered. The way I have analyzed them here, these expressions encode a free-choice option, and only the result of this option may be considered something that relates to alternative values. Consider (140) again (= (131)).

(140) *Wúlùn   nǐ   yàoqǐng shéi, wǒ dōu huānyíng   tā.*
        no matter you   invite   who   I   DOU welcome   (s)he
        'No matter who you invite, I will welcome him.'

Even though *shéi* 'who' will bear focal stress in most realizations of (140), we cannot say that alternatives to *shéi*, or alternatives to the sentence with *shéi*, are considered. Instead, we want to say that alternatives to (the sentence with) a freely chosen value assigned to the *shéi*-variable are considered, and this value is not encoded in (140). Therefore, (140) does not have a focus (or C-topic) the way other sentences with parametric *dōu* do. Nonetheless, we clearly understand the relationship among (140), and a specific value assignment that may be contrasted with alternative value assignments. Therefore, I see no principled reason not to say that, in this case as well, parametric *dōu* interacts with a distinguished information-structural category. A similar argument can be developed for disjunctive *wúlùn*-complements. Take another look at (141) (= (139c)) to see this.

(141) *Bùguǎn tā   qù bu   qù, nǐ   dōu/yě huì   qù   ma?*
        no.matter (s)he go not go you DOU/YE will   go   PRT
        'Will you go, no matter whether (s)he's going or not?'

Again, the complement of *bùguǎn* 'no matter' will contain an element with a focal accent, but it need not be within the disjunctive structure. In (141) focal stess on *tā* '(s)he' would yield a good utterance, and the string *qù bu qù* 'go not go' might be entirely deaccented. Still, we want to say that *dōu* or *yě* interacts with the freely chosen truth value of *tā qù* '(s)he is going', and this truth value cannot be identified univocally by examining the prosody of (141).

The second problem concerns the (non-)interchangeability of *dōu* and *yě*. The mere fact that *yě* may be used instead of *dōu* is not a problem: *dōu* reflects the fact that, if any of the competing values from the domain had been chosen, the sentence would likewise have been true; *yě* reflects the fact that there is at least one alternative value which would have

yielded another true sentence, and this is true no matter which value is actually chosen. Therefore, both sentences do not differ in their readings. (Note once more that the component of universality necessarily present in the interpretation of *wúlùn*-sentences does not come in by way of using *dōu* or *yě*, but rather by way of using *wúlùn* 'no matter', and by way of relating to focus alternatives.)

The problem is that *dōu* and *yě* may only interchange in *wúlùn*-sentences if there is a nonveridical operator present which has matrix scope (cf. the minimal pairs in (142), our old descriptive generalization from ch. 3 in (143), and the whole discussion in section 3.3.3.A).

(142) a. *Wǒ wúlùn   shénme-yàng-de shū yě *(nénggòu) zhǎodào.*
            I   no.matter what-kind-ATTR book YE can   find
            'I can find any kind of book.'
      b. *Wǒmen wúlùn   shénme dǐxì   yě *(bù) zhīdao!*
            we   no.matter what   details   YE not know
            'We don't know any exact details!'

(143) *Nonveridicality and the grammaticality of sentences with wh-word... yě-strings:*
        In assertions involving *wh*-words/indefinite pronominals conveying the meaning of (some kind of) universal quantification over the domain of the *wh*-word/indefinite pronominal, *yě* may only be used in nonveridical contexts.

Nonveridical operators are those operators that do not entail the truth of their embedded propositions. (142a) is fine with the modal verb, because it is nonveridical: The fact that the subject referent in (142a) can find any book does not entail that (s)he really finds a book. Negation as in (142b) is an extreme case of nonveridicality because it does not just fail to entail the truth of its embedded proposition, it entails its falsity. The sentences without the operators are bad, and that is the situation covered by the old generalization in (143). The reason why these semantic facts have already been discussed in ch. 3, and why they constitute a problem, is as follows: Although I have been able to identify nonveridicality as a necessary condition of the grammaticality of *wúlùn*-sentences with *yě*, I have no idea why this is so. Non-veridicality does not tie in neatly with anything else that I know about *wúlùn*-sentences. Therefore, nonveridicality figures as a constraining factor which does not appear to have anything to do with the focus semantic facts discussed in this chapter. For this reason, I have introduced nonveridicality as a constraining factor on *dōu/yě*-uses in ch. 3. I leave the exploration of a possible closer link as a challenge for future research.

The third problem is that some *wúlùn*-sentences are bad even though they have nonveridical operators taking sentential scope as in (144a) and (145a), but they improve considerably if small changes as in the respective b-sentences are made. (146a) is bad, as predicted by (143), but it is fine if *-le* is used as in (146b). Moreover the good, albeit marked, sentence with *yĕ* in (146b) is a counterexample to the generalization in (143).

(144) a. *Wúlùn   tā   shuō SHÉNME,wŏ   dōu/*yĕ huì dāying de.*
no.matter (s)he say what   I   DOU/YE will agree PRT
'WHATEVER he says, I'll agree to it.'

   b. *Wúlùn   tā   shuō SHÉNME, wŏ   dōu/?yĕ dāying.*
no.matter (s)he say what   I   DOU/YE agree
'WHATEVER he says, I agree to it.'

(145) a. *Bùguăn cóng SHÉNME dìfāng   dōu/*yĕ kĕyĭ shàng-qu.*
no.matter from what   place   DOU/YE can   ascend-go
'One can ascend from ANY direction, no matter WHICH.'

   b. *Bùguăn   cóng SHÉNME dìfāng wŏmen dōu/?yĕ kĕyĭ shàng-qu.*
no.matter from what   place   we   DOU/YE can ascend-go
'We can ascend from ANY direction, no matter WHICH.'

(146) a. *Tāmen   SHÉNME dōu/*yĕ găiliáng.*
they   what   DOU/YE change.for.the.better
'No matter WHAT, they change EVERYTHING for the better.'

   b. *Tāmen   SHÉNME dōu/yĕ   găiliáng-le.*
they   what   DOU/YE change.for.the.better-ASP
'They have changed EVERYTHING for the better, no matter WHAT it is.'

I do not know of a solution to any of these puzzles. Specifically, I do not know why (144a) improves if *huì* and *-de* are dropped as in (144b); it is unclear to me why (145a) is better with an overt subject as in (145b), and why, as in (146b), (146a) improves if *-le*, the perfective aspect marker, is used. The last sentence is also a counter-example to Lin's generalization that *wúlùn*-sentences are bad in extensional contexts.

This section has delivered the following insights: Apart from the *dōu/yĕ*-triggering use of *wh*-words/indefinite pronominals as negative polarity items, there is another use of *wh*-words/indefinite pronominals as free choice items which goes along with the obligatory occurrence of *dōu* or *yĕ*. This is *dōu/yĕ*'s use in *no-matter*-clauses. I have demonstrated that the use of *dōu* in *no-matter*-clauses cannot be classified as distributive. Instead, an analysis in terms of parametric *dōu/yĕ* should be favoured. The same applies to *no-matter*-clauses with a disjunctive make-up. Quite

a few sentences in this domain are grammatical, or ungrammatical for reasons that I do not fully understand.

Table 4.1 summarizes the characteristic properties of sentences with *dōu/yĕ* and *wh*-words/indefinite pronominals used as strong negative polarity items on the one hand (cf. section 4.3.3), and of sentences with *dōu/yĕ* and *wh*-words/indefinite pronominals used as free-choice items, on the other (cf. section 4.3.4). Opposing the two kinds of phenomena as in Table 4.1 makes it clear that there is a large class of sentences that are ambiguous between the two possibilities (cf., for instance, (134b)).

Table 4.1 Wh-*words/indefinite pronominals as strong negative polarity items, or as free-choice items*

	strong negative polarity constructions	Wúlùn-(/no-matter-) *constructions*
wh-word/indefinite pronominal interpreted as a ...	(strong) negative polarity item (predicate denoting the most general property that may be attributed to a referent of the relevant sort, e.g. **thing** for *shénme*, **person** for *shéi*, etc.)	free-choice item (/disjunction of predicates as an alternative kind of free-choice item) (sortally restricted variable ([–animate] for *shénme*, [+human] for *shéi*, etc.) bound by a free-choice operator)
set of alternatives to the focus value contains ...	predicates that are semantically stronger than the predicate in the assertion	different values of the variable
sentential context must ...	result in downward-entailingness of the denotation of the *wh*-word/indefinite pronominal	be non-veridical if *yĕ* is to be used

4.3.5 Parametric dōu/yĕ *and concessivity*

For a first impression of the domain to be covered in this section have a look at (147) and (148).

(147) *(Suīrán)* MÉI   XIÀ YŬ,   tā   ???*dōu/yĕ dài-zhe săn.*
although not.have fall rain (s)he DOU/YE take-ASP umbrella
'(S)he took along an umbrella although IT WASN'T RAINING.'
(ad. hx: 619)

(148) a. *(Jíshĭ)   GUÓWÁNG lái,   wŏ   dōu/yĕ bù   qù.*
even.if king   come I   DOU/YE not   go
'Even if THE KING comes I won't go.'

b. *Jiùshì   GUÓWÁNG   lái,   wǒ   ???dōu/yě   bù   qù.*
   even.if   king   come   I   DOU/YE   not   go
   'Even if THE KING comes I won't go.'

The sentences in (148) are examples of concessive conditionals: A conditional is enriched in such a way that, apart from encoding the mere conditional semantics, an *even*-interpretation relating to (part of) the protasis is added. In (147) no conditional semantics is expressed, and subordinate clauses as in this sentence are traditionally called concessive clauses. The tasks for this section can be derived from these three sentences and their interplay.

First, with a rough idea of the semantics of concessive constructions in mind, we should be able to say what triggers the use of parametric *yě*. The statement of this triggering relationship will necessitate a restatement of the function of parametric *yě*. Second, the ungrammaticality of using *dōu* in (147) should be made to follow from what we know about *dōu* and concessives. Note in passing that *dōu* is bad in (147) irrespective of the use of *suīrán* 'although'. Both points will be dealt with in sub-section A. Third, we should explain how *dōu* and *yě* come to be used in concessive conditionals. Fourth, an explanation must be sought for the fact that concessive conditional clauses introduced by *jìshǐ* 'even if' as in (148a) behave in a special way if compared with concessive conditional clauses introduced by the functionally and phonetically similar element *jiùshì* 'even if' as in (148b). *Jiùshì* seems to block the use of *dōu*, while *jìshǐ*, or the non-use of any functional element introducing the concessive conditional clause, does not have any such effect. Sub-section B takes care of these two issues.

There is also a fifth point, but I will not pay any closer attention to it. Example (148a), for instance, has more readings than the one given in the English translation. Specifically, it is not restricted to a potential or hypothetical reading. It might just as well be interpreted as denoting an irrealis, or a counterfactual semantics: 'Even if the king came I wouldn't go' and 'Even if the king had come I wouldn't have gone' are also good translations of (148a) depending on the context. Provided the subordinating connectives such as *jìshǐ* in (148a) do not restrict the interpretation in a conventionalized way, this is a general phenomenon in Mandarin complex sentences, and I will ingnore the details of this fact in the following.[40] Still, we should avoid stating any of our generalizations in a way which would collide with this fact.

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[40] Sentences with the same kind of indeterminacy for *cái* and *jiù* are (23) and (67). For an overview of such restrictions or preferences cf. e.g. Bisang (1992: sections 5.5/5.6).

A. Concessive sentences and *yě* vs. *dōu*

The literature on concessives comes from heavily diverging frameworks within linguistics. Language philosophers, theoretical linguists, functional linguists, and typologists all compete to find solutions to the problems posed by these constructions. I will not try to give an overview of the different proposals that have been made. But I can aim at indicating where the following discussion has its points of reference among the different schools.

Although I would certainly subscribe to the view that concessives play an important role in argumentation and discourse organization, I do not claim that their semantic analysis must be based on discourse notions such as 'concession' or 'conceding' (for an approach in this vein, cf. Couper-Kuhlen & Thompson 1998). Among the more recent semantic approaches to concessivity (with semantics to be understood in a very broad sense here), I do not follow Di Meola's (1997) analysis of concessivity as "hidden causality", either. Arguments against this approach are found in König & Siemund (2000). The philosophical tradition (represented, for instance, by Barker 1991) is certainly relevant, but I think its basic insights are included in the narrowly linguistic approaches. Likewise, the typological discussion of concessives and concessivity found in König (1988) is important, but it could only serve as a plausibility check for certain empirical facts concerning Mandarin concessives. Pasch's (1992a, 1992b), König's (1991b), or König & Siemund's (2000) findings regarding the semantic core of concessivity are those analyses that will be most relevant in our context. As regards the conditionality facts of concessive conditionals, our old insights from sections 4.1.5 and 4.2.3 carry over: I will again assume a Lewis/Kamp/Heim/Kratzer-style approach to conditionality, but I will do so without going into details.

As regards non-conditional concessivity, I will assume a semantics similar to the one defended by König & Siemund (2000). The detail that matters here is illustrated in (149). Sentence (149a) presupposes, among other things, (149b).

(149) a. *(Suīrán)* [*MÉI   XIÀ   YǓ*]$_{C\text{-topic,}}$
       although not.have fall   rain
       Lǎo Lǐ   yě   DÀI-ZHE   SǍN.
       Old Li   YE   take-ASP   umbrella
       'Although [IT WASN'T RAINING]$_{C\text{-topic,}}$ Old Li TOOK ALONG AN UMBRELLA.'
    b. *usually, if* p, *then not* q
       'Usually, if it doesn't rain, Old Li doesn't take an umbrella along.'

The presupposition in (149b) states that the more common behaviour is not to take an umbrella along if it does not rain.[41] Note that the quantification by way of *usually* prevents the combination of (149a) and (149c) from leading to a contradiction: If it is only true of most, but not of all, situations with dry weather that Old Li does not take an umbrella along, then the fact that in the asserted predication he did take along an umbrella is not a problem. The presupposition does not allow us to conclude anything about alternatives to *p*, but only about alternatives to *q*. But for parametric *yĕ* to be used felicitously, we also need to make reference to an alternative to *p* or to part of *p*. This is where the C-topic in (149a) comes into play. With an information-structural make-up as in (149a), I claim that the sentence relates to an alternative sentence as presented in (149c) in an English translation.

(149) c. *If it had rained, Old Li would have taken along an umbrella.*

The first proposition has changed its polarity, while the second one has remained unchanged in this respect. Disregarding the factuality changes made in (149c), and the change from the concessive marker to the conditional marker, this sentence constitutes a proper alternative in the spirit of the account of sentences with C-topics as presented in section 4.2.4. Now, why is *yĕ* used in (149a)? The case is intuitively clear: *Yĕ* with its semantics reflecting existential quantification over the domain of alternatives is used because, apart from the asserted circumstance in focus (dry weather), there is at least one other type of circumstance, viz. rainy weather, under which Old Li would also take along an umbrella. This sounds straightforward, but if we look at it more closely in the light of our preliminary generalization covering the function of parametric *yĕ* in (150) (= (110)), we run into trouble.

(150) a. *Yĕ* is an agreement marker; the verbal background agrees with a semantically specific focus.
b. Among all the possible alternatives to *yĕ*-sentences that only differ with regard to the focus value, the pragmatically relevant set of alternatives is considered, and it is presupposed that at least one of these alternatives is true. (to be revised)

The problem is that existential quantification in (150b) ranges over actual cases, but in our example we need quantification over non-actual cases: (149a) is not a generic or habitual sentence, it is about a single occasion on which Old Li took along an umbrella although it was not raining (the

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[41] I ignore several details here, among them the fact that the regularity stated in (149b) will typically be stated with respect to all people, and not only with respect to Old Li.

use of *méi*, i.e. the negation marker of propositions that would be marked by the perfective aspect marker -*le* if they were not negated, is a formal indicator of this). Therefore spelling out the assertion and the presupposition should not yield 'Old Li has taken along an umbrella in spite of the dry weather, and Old Li has, at the same time, taken along an umbrella because of the rainy weather'. What we need is 'Old Li has taken along an umbrella in spite of the dry weather, and Old Li would likewise have taken along an umbrella if it had been raining'. Quantification is thus not over actual worlds, but over possible worlds. This is reminiscent of *jiù*: Recall the discussion in section 4.2.4 which took (151) (= (61)) as a starting point.

(151) *Yīnwèi*   [*CHUĀNGHU*   *WÀIMIAN YŎU-GE*   *CHÚFÁNG*]C-topic,
because   window   outside   exist-CL   kitchen
fángjiān jiù   ÀN   le.
room   JIU   dark   PRT
'Since [THERE IS A FOOD STALL OUTSIDE THE WINDOW]C-topic, the room is DARK.' (hx: 346)

I have argued in that section that relevant alternatives to (151) are about situations in which the room would not be dark because no food stall is placed in front of the window. I have tried to cover such cases by including a modal disjunction into the relevant generalization in (152) (= (69); I repeat the final version of the generalization here).

(152) a. *Jiù* is an agreement marker; the verbal background agrees with a semantically specific focus or an (implicit) C-topic.
b. Among all the possible alternatives to *jiù*-sentences whose propositions only differ with regard to the focus or the (implicit) C-topic value, the pragmatically relevant set of alternatives is considered, and it is entailed that at least one of these alternatives is wrong, or would be wrong. One of these alternatives is wrong in those cases in which the alternatives are not counterfactual; it would be wrong in those cases in which counterfactual alternatives are considered.

Leaving aside the complications of C-topics and implicitness that I will not go into in the discussion of parametric *yĕ* and *dōu*, we get a revised version of (150) as in (153).

(153) a. *Yĕ* is an agreement marker; the verbal background agrees with a semantically specific focus.
b. Among all the possible alternatives to *yĕ*-sentences that only differ with regard to the focus value, the pragmatically relevant

set of alternatives is considered, and it is presupposed that at least one of these alternatives is true, or would be true. One of these alternatives is true in those cases in which the alternatives are not counterfactual; it would be true in those cases in which counterfactual alternatives are considered.

This generalization correctly covers the use of *yě* in concessive sentences, which necessarily refer to counterfactual alternative sentences if (part of) the subordinate clauses are in focus, or are C-topics.

Note that *yě* is not generally used in concessive sentences. I assume, in accordance with the findings of section 3.3, that *yě* is used in all and only those concessive sentences in which (part of) the subordinate clause is a C-topic, or is in focus.

Dōu is strongly dispreferred in concessive sentences (cf. (147a)), and I attribute this behaviour to the (stipulated) fact that the kind of universal quantification relevant to the interpretation of *dōu*-foci is unable to refer to alternative propositions that differ from the asserted proposition in factuality.

B. Concessive conditionals and dōu *vs.* yě

The term 'concessive conditional' covers cases as in (154) (= (148)).

(154) a. *(Jishi)*   GUÓWÀNG   *lái,*   *wǒ*   *dōu/yě*   *bù*   *qù.*
        even.if   king   come I   DOU/YE not   go
        'Even if THE KING comes I won't go.'
      b. *Jiùshì*   GUÓWÀNG   *lái,*   *wǒ*   ???*dōu/yě*   *bù*   *qù.*
        even.if   king   come I   DOU/YE   not   go
        'Even if THE KING comes I won't go.'

König (1988) also subsumes sentences as discussed in section 4.3.4 under this heading. Both types are indeed very similar, but I have decided in favour of a more fine-grained classification, because concessive conditionals have foci that are straightforwardly encoded on the surface. Sentences with *no-matter*-elements have, on the other hand, been analyzed as instantiating rather complex information-structures that cannot be immediately read off the surface (cf. the discussion in section 4.3.4).

Our tasks here are to say how *dōu* and *yě* come to be used in (154a), and what renders the use of *dōu* strongly dispreferred in sentences such as (154b). To perform these tasks, let us first develop an understanding of the meaning of concessive conditionals.

There are three components of meaning that figure dominantly in the interpretation of concessive conditionals. Two of them have found their way into the name of the construction, i.e. concessivity and condition-

ality. The third one is the semantics of *even* whose relevance for English concessive conditionals is clear since they are marked by *even if*.

What, then, is concessive about concessive conditionals? The answer is easy: With the conclusions of the preceding section in mind, we can say with reference to (154a) that if the king comes, one would usually not stay away, but rather join the crowd and have a look at the monarch. That is tantamount to saying that the complement of the consequent would usually be assumed to be true under the given circumstances, and this amounts to presupposition (149b). The conditional component is just as obvious: (154a) entails the following conditional: *If the king comes I won't go.* Spelled out in terms of the conditional semantics assumed in this study, this amounts to 'All situations in which the king comes are also situations in which I won't go'. *Even*-semantics is relevant because the contribution of *jishī* in (154a) amounts exactly to that of *even* (cf. section 4.3.2 and Krifka 1995) – apart from having a subordinating function: If the fact that the king is coming (i.e. the content of the *even*-focus) does not make the speaker go out and join the crowd, then nothing else will do. In other words: Within the given context, the presence of the king in town is the semantically strongest condition which could possibly trigger activity on the part of the speaker, and all alternatives to this condition are semantically weaker, thereby entailing the inactivity of the speaker under all alternative circumstances of the same contextual domain.

By now it is probably redundant to state how the triggering of *dōu* comes about: A focus precedes the structural position of *dōu*, and *jishī*, or the emphatic assertion type (cf. section 4.3.2) forces an interpretation upon the focus such that all alternatives to the asserted sentence are true as well. This is precisely what triggers the use of *dōu*. *Yě* may be used instead because existential quantification, i.e. the type of focus quantification triggering *yě*, is entailed by universal quantification.

(154a) does not present any further difficulties, but (154b) does: Both sentences may be translated by the same sentence into English, and both sentences are almost identical, but in (154b) the use of *dōu* is strongly dispreferred. The only respect in which the sentences differ is the use of *jishī* 'even if' as opposed to *jiùshì* 'even if'. It looks like we have to attribute the deviance of *dōu*'s use in (154b) to *jiùshì*. In fact, a more general statement is possible: All concessive conditionals in which an *even-if*-marker containing the syllable/morpheme *jiù* is used are bad with *dōu*, but good with *yě*. Here is a list of examples.

(155) a. *Nǐ*   *jiùshì*   YUÀNYI   *xīshēng nǐ-de*   *shíjiān,*
        you   even.if   willing   sacrifice you-ATTR   time

    wǒ   yě/???dōu   bù   néng jiēshòu.
    I   YE/DOU   not   can   accept
    'Even if you WANT to sacrifice your time, I can't accept it.'

b. *Tā   jiùshì   yào QÙ, yě/???dōu gāi   xiān jié-le   hūn.*
    (s)he even.if must go YE/DOU   should first tie-ASP marriage
    'Even if she GOES, she should marry first.' (ad. Alleton 1972: 78)

c. *Nǐ   jiù   BÙ   shuō, wǒ   yě/???dōu   huì   zhīdao.*
    you   even.if   not   say   I   YE/DOU   will   know
    'Even if you DON'T say it, I will get to know it anyway.'
    (ad. XHDC: 441)

d. *Jiùsuàn tā   BÙ   zài   nàr,*
    even.if   (s)he not   at   there
    nǐ   yě/???dōu   yīnggāi zài   qù   yī-xià.
    you   YE/DOU   should   again go   1-CL:time
    'Even if (s)he's NOT there, you should still go there once
    more.' (cf. Alleton 1972: 111)

All of the examples in (155) would be fine with *dōu* if *jíshǐ* 'even if' were used instead of the *jiù*-words. The syllable/morpheme *jiù* in these sentences is, in fact, not unknown to us: The character 就 is the same as the one used to write parametric *jiù*, and its use as a subordinating *even-if-*word has been mentioned in section 2.2.6. Even though I have not made an attempt to unify the parametric use of *jiù* and its use in *even-if*-words – and I firmly believe that this attempt would not lead anywhere –, I would still like to explore the possibility that both uses share a certain component of meaning. Recall that parametric *jiù* has been claimed to reflect negated universal quantification over the domain of focus alternatives. Now assume that *jiù* in (155) has a similar function, but in a way which conforms to the function of focus particles: *Jiùshì* triggers this focus reading, it does not reflect it. The obligatory use of *yě* shows us that existential quantification over the domain of focus alternatives is involved. The resulting quantificational type is existential quantification, but with the caveat that not all alternatives are true; or, the other way round, negated universal quantification, but with the caveat that at least one alternative is true. This interpretation might, for instance, be spelled out as follows for (155c): 'If you don't say it I will know it, and there are other circumstances under which I will know it, but there is at least one circumstance under which I will not know it'. If this is a good paraphrase of (155c), two consequences follow. First, *even if* is not a fully faithful translation of Mandarin *jiù*-subordinators. This is so because *even if* involves universal quantification over the domain of alternatives whereas, according to our analysis, *jiù*-words exclude precisely this. Second, the

deviance of the use of parametric *dōu* follows without any further stipulations, because parametric *dōu* would reflect a focus reading that is straightforwardly excluded by the *jiù*-subordinator: Universal quantification over the domain of alternatives.

The discussion of parametric *dōu* and *yě* in concessives and concessive conditionals has yielded the following results. If we assume an appropriate semantics of concessives, the use of parametric *yě* in concessives with (partially) focused subordinate propositions follows: Apart from the circumstance which is presupposed to be compatible with the truth of the whole sentence, there must be another circumstance from among the complement of the presupposed circumstance which would also be compatible with the truth of the whole sentence, and this alternative circumstance is more usual as a circumstance for the truth of the matrix proposition. Since the alternative circumstance in concessives must differ from the presupposed circumstance in factuality, an accomodation of our descriptive generalization for parametric *yě* was necessary. Parametric *dōu* does not allow for such differing factuality statuses, so it may not be used in concessives. The use of *dōu* and *yě* in concessive conditionals follows without any further stipulations from our standard assumptions concerning the semantics of conditionals and emphatic *even*-assertions. The strongly dispreferred use of *dōu* in concessive conditionals marked by a *jiù*-word probably follows from a conflict among the quantificational types triggered by *jiù*-focalizers and the *dōu*-agreement marker.

For conclusions concerning the overall function of parametric *dōu* and *yě*, turn to section 4.6.

4.4   THE ARCHITECTURE OF THE SYSTEM

Having made our way through the plains of single phenomena, it is now time to climb to an elevated position and study the major lines structuring the whole area. The four types of quantification over domains of focus alternatives that are reflected by parametric *cái, jiù, dōu* and *yě* are another instance of the ubiquitous relevance of the classical quantificational types. These four types come into being by combining existential and universal quantification with inner or outer negation.[42] If, for example, the property of being lazy is discussed with regard to students, the following four basic quantificational assertions are possible: *All students*

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[42] Of course, either quantifier would be sufficient to derive the whole system because $\neg\exists x \neg\varphi[x]$ is equivalent to $\forall x\, \varphi[x]$ (e.g. *There is no student who is not lazy* is equivalent to *All students are lazy*), but this slight redundancy yields a system that is optically less clumsy.

are lazy, *Some student(s) is(/are) lazy*, *No student is lazy*, and *Not all students are lazy*. No matter what kind of world we live in, or how we restrict our domain of quantification, provided students exist and they may possibly be lazy, at least one of the four statements must be true.

Löbner (1990) has demonstrated to what extent lexical fields and functional domains in language are structured according to the quantificational square. Concerning focus semantics, König (1991a) has identified the difference among additive and exclusive focus markers as basic. His term 'additive' relates to my 'existential quantification over the domain of alternatives'; 'restrictive' corresponds to my 'negated existential quantification over the domain of alternatives'. The theoretical innovation propagated in this study is the application of the whole quantificational square to focus semantics, and the results are encouraging: It could be shown that the assumption of a full-fledged system of focus-quantificational types is able to shed light on some notoriously dark spots of Mandarin grammar. First and foremost, this applies to the *jiù*-account: Since the quantificational type triggering the use of *jiù*, viz. negated universal quantification, is the least common one to be encoded systematically (cf. Löbner 1990), and since *jiù*'s function has been controversial over decades, the results concerning *jiù* are probably the most unexpected ones.

What we should do now is test our results against the background of what we know about entailments, contradictions, and other relations holding among assertions that instantiate one of the four focus quantificational types. Two assertions or judgements that only differ with regard to the quantificational type may traditionally be (i) contradictory, (ii) contrary, (iii) subcontrary, or (iv) subalternate. Let us look a bit closer at these relationships, and determine the kind of predictions we should be able to make in our empirical domain. The introductory examples are all of the lazy-student kind, but recall that these sentences quantify over subject denotations, while our Mandarin focus phenomena involve quantification over alternatives. I will often use mnemonic operator symbols in the following which are, of course, not to be mistaken as formal representations of quantificational formulae.

(i) Contradictions

The sentences *No student is lazy* ($\neg\exists$) and *Some student(s) is(/are) lazy* ($\exists$) are contradictory, because it is impossible that both are true or that both are wrong at the same time, and in the same context. Note that the two sentences comprise among them all possible situations if we try to quantify the pervasiveness of laziness among students, because *Some students are lazy* would allow for the possibility that all students are

lazy.[43] Another contradictory pair is *All students are lazy* ($\forall$) and *Not all students are lazy* ($\neg\forall$).

Applied to Mandarin focus semantics we would predict that the relevant components of meaning in *cái*-sentences ($\neg\exists$) and in *yě*-sentences ($\exists$) should be contradictory, just like those in *dōu*-sentences ($\forall$) and in *jiù*-sentences ($\neg\forall$).

(ii) Contraries

The contrary sentences *All students are lazy* ($\forall$) and *No student is lazy* ($\neg\exists$) may, just like contradictions, not be true at a time, and in the same context. They differ from contradictions in that both may be false (probably the right option in the real world) because it may be true that only some students are lazy.

In Mandarin we would expect to find that the focus-semantic components of *dōu*-sentences ($\forall$) and *cái*-sentences ($\neg\exists$) are contraries of each other.

(iii) Subcontraries

Subcontrary sentences such as *Some student(s) is(/are) lazy* ($\exists$) and *Not all students are lazy* ($\neg\forall$) can both be true at a time, and in a single context, but they may not both be false (*No student is lazy* and *All students are lazy* results in a contradiction).

Mandarin focus semantic instantiations of subcontrariety should be expected among *yě*-sentences ($\exists$) and *jiù*-sentences ($\neg\forall$).

(iv) Subalternates

Subalternate sentences display one-way entailments. While *No student is lazy* ($\neg\exists$) entails *Not all students are lazy* ($\neg\forall$) and *All students are lazy* ($\forall$) entails *Some student(s) is(/are) lazy* ($\exists$), the reverse is not true.

In Mandarin, the focus semantics of *cái*-sentences ($\neg\exists$) should thus entail the focus semantics of *jiù*-sentences ($\neg\forall$), and the focus semantics of *dōu*-sentences ($\forall$) should entail the focus semantics of *yě*-sentences ($\exists$).

The relations between assertions instantiating specific quantificational types, their respective properties, and the relevant pairs of Mandarin parametric words are summarized in Table 4.2.

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[43] The feeling of deception that we have when somebody says *I ate some of your candy* while he has really eaten all of my candy is usually attributed to a Gricean implicature, but in the lofty halls of logic, implicatures do not count.

Table 4.2: Relations among quantificational types, and Mandarin parametric words reflecting these relations in focus semantics

	$\forall x \, \varphi[x]$	$\neg\exists x \, \varphi[x]$	$\exists x \, \varphi[x]$
$\neg\forall x \, \varphi[x]$	contradiction: both cannot be true, or false *jiù – dōu*	subalternation: one-way entailment *cái – jiù*	subcontrariety: both may be true, but not false *jiù – yě*
$\forall x \, \varphi[x]$		contrariety: both cannot be true, but both may be false *dōu – cái*	subalternation: one-way entailment *dōu – yě*
$\neg\exists x \, \varphi[x]$			contradiction: both cannot be true, or false *cái – yě*

Figure 4.5 depicts a version of the quantificational square for parametric *cái, jiù, dōu* and *yě*.

Figure 4.5: Mandarin parametric words in the quantificational square
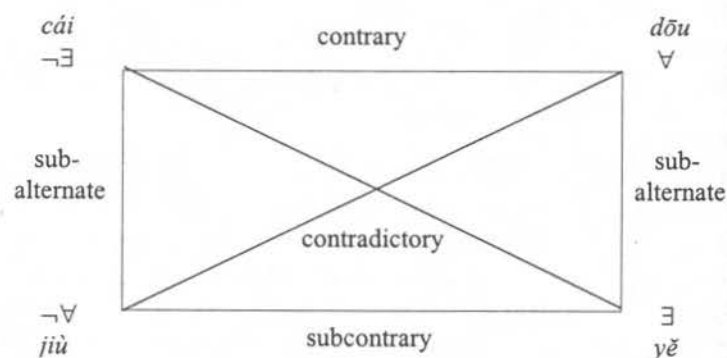
I will now proceed as follows: I will test for each possible relational type whether intuitions can be matched with the predictions summarized in Table 4.2. To do so, I will pursue the following line of argumentation. We will generally oppose two sentences supposedly instantiating one of the possible relationships holding among their focus semantic components of meaning, and we will check whether the intuitions can be matched with our predictions. This is easily done in most cases. The only oppositions which require more discussion are the ones involving *jiù*-sentences, and the subcontrary relational type.

I will only test basic examples, and disregard more specific readings of sentences with parametric words. Many of such special uses have been discussed in the preceding sections of this chapter, but they often do not lend themselves to being contrasted with other relevant sentences that only differ with regard to the parametric word used. This is so because the interpretations of such sentences with specific readings are usually dependent on the presence of peculiar focus-marking devices which restrict the focus reading further. It thus often becomes impossible to exchange one parametric word for another without influencing acceptability. The fact that the more specialized readings are disregarded is not justified by any good reason; a complete account would have to show for each and every use of a parametric word what ensures or bars its substitutability. My only reason for proceeding the way I do is practical: A full account of all sub-cases would simply be too long to be included in the present study.

A. Contradictions: cái *vs.* yě / dōu *vs.* jiù

Table 4.2 predicts contradictions among the focus-semantic components of the following a-sentences if compared to the respective b-sentences.

(156) a. *(Zhǐyǒu) GUÓWÁNG lái -de shíhou, wǒ cái qù.*
   only king come -when I CAI go
   'I only go when the KING comes.'

   b. *GUÓWÁNG lái -de shíhou, wǒ yě qù.*
   king come -when I YE go
   'I also go when the KING comes.'

(157) a. *(Jíshǐ) GUÓWÁNG lái -de shíhou, wǒ dōu bù qù.*
   even.if king come -when I DOU not go
   'I don't even go when the KING comes.'

   b. *GUÓWÁNG lái -de shíhou, wǒ jiù bù qù.*
   king come -when I JIU not go
   'I don't go when the KING comes[, but there's at least one occasion on which I will go].'

For (156) it is easy to see that we are really dealing with a contradiction: Either the speaker goes out only once as in (156a), or the speaker goes out at least twice as in (156b); an option combining both alternatives does not exist. The problem in (157) is that (157a) and the English translation of (157b) without the explicating brackets are not contradictory, but the Mandarin sentences, in their focus semantic components, are. In section 4.2.2 the required argument for *jiù* has first been stated: *Jiù*'s quantificational type excludes the possibility that all alternative sentences are true. Since I never had difficulties in eliciting precisely this result

with my consultants, I take it to be an established fact (cf. also the discussion in the sub-section on subalternates below). *Dōu*'s focus quantificational type ('*even*-semantics') has it that all contextually relevant alternatives are implied to be true. Taking these two things for granted, the non-native speaker of Mandarin will likewise be able to sense the contradiction between (157a) and (157b).[44]

B. *Contraries:* cái *vs.* dōu

A contrary relation is defined as one in which both assertions may not be true at a time, but both assertions may be false. *Cái*'s and *dōu*'s focus-semantic quantificational types are predicted to stand in a contrary relationship as witnessed by Table 4.2 and Figure 4.5. Pertinent examples are presented in (158).

(158) a. *(Zhǐyǒu) GUÓWÁNG lái -de shihou, wǒ cái bù qù.*
      only   king   come -when   I CAI not go
      'I only don't go when the KING comes.'
    b. *(Jíshǐ) GUÓWÁNG lái -de shihou, wǒ dōu bù qù.*
      even.if king   come -when   I DOU not go
      'I don't even go when the KING comes.'

(158a) says that there is only a single thing that makes the speaker stay at home, and that is the fact of the king coming. (158b), on the other hand, says that, apart from the king coming, all other contextually relevant things have the same consequence: The speaker will stay at home. It is thus impossible to use both sentences in (158) in a single situation. The second characteristic of contraries – both assertions may be false – likewise holds: Suppose the speaker never goes out on the street if the king or a politician (with the king not counting as a politician) may be

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[44] The contradiction arising in the case of (156) is still felt to be more blatant than the one between the sentences in (157). I attribute this difference to the following fact: The focus-semantic type associated with *cái* (¬∃) excludes alternatives by way of entailment. All other focus semantic types exclude or include alternatives by way of presupposition. Therefore, the simultaneous assertion of the sentences in (157) only results in a presupposition failure, while the simultaneous assertion of the sentences in (156), by way of the *cái*-sentence, entails the presupposition of the *yě*-sentence to be false. This is a more severe contradiction than a contradiction between two presuppositions. In the domain of sentences not quantifying over alternatives, the contrasting pair in (i) is parallel to (156) in that there arises a contradiction involving an entailment; (ii) parallels (157) in that the contradiction is among presuppositions.

(i)   a. Paul's daughter is five years old.
       b. Paul doesn't have kids.
(ii)   a. Paul's daughter is five years old.
       b. The fact that Paul doesn't have kids bothers him.

seen in public, but he loves to take pictures of movie stars. Such a person could neither utter (158a) nor (158b) felicitously, or without saying a lie if the universe of discourse remains constant. For *cái* and *dōu* we really seem to be dealing with a contrary relationship among types of focus quantification.

C. *Subalternates:* cái *vs.* jiù / dōu *vs.* yě

The relationship among plain *cái*-sentences and plain *jiù*-sentences is as predicted: (the focus-semantic component of) (159a) entails (the focus-semantic component of) (159b), but not vice versa.

(159) a. *GUÓWÁNG lái, wǒ cái qù.*
      king   come I   CAI go
      'Only if the KING comes will I go.'/
      'I won't go before the KING comes.'
    b. *GUÓWÁNG lái, wǒ jiù qù.*
      king   come I   JIU go
      'If the KING comes I will go.'
      'When the KING comes, I will go.'

It is, for instance, possible to utter (159b) first, and then get more specific by uttering (159a). Both sentences may easily be interpreted as either conditionally or temporally restricted; cf. the two English translations each. In both cases the (focus-semantic) entailment relation from the a-sentence to the b-sentence holds, since the negation of the truth of all alternatives as in (159a) entails the negation of the truth of some alternative as in (159b). For the opposite direction, imagine a situation in which the speaker joins the crowd whenever a member of the royal family may be seen in public. In this case (159b) in its conditional reading would be true, but not (159a), as predicted by the assumed subalternate relation. The same argument is easy to state for the temporal readings.

Whenever specific markers are used that restrict the focus in such a way that only negated existential quantification over the domain of alternatives is possible, *jiù* may not be used; cf. the use of *chúfēi* 'only if' in (159').

(159') *Chúfēi GUÓWÁNG lái, wǒ cái/*jiù qù.*
      only.if king   come I   CAI/JIU go
      'Only if the KING comes will I go.'

The incompatibility of *chúfēi* 'only if' and *jiù* does not fall out for free in my account because the type of focus quantification triggered by *chúfēi* is a limiting case of those cases covered by *jiù*'s negated universal quan-

tification. I must assume quite *ad hoc* that, in the case of *cái* vs. *jiù*, the more specific agreement marker/parametric word must be used if the specific interpretation is overtly encoded.[45] We will see that *dōu* and *yě* differ in this respect. Before turning to these words, let us study facts analogous to those in (159) for simple sentences. This is done in (160)/(160').

(160) a. *Zài*   ZHÈR   *wǒmen*   *cái*   *néng*   *wánr.*
     at   here   we   CAI   can   play
     'We can only play HERE.'

    b. *Zài*   ZHÈR   *wǒmen*   *jiù*   *néng*   *wánr.*
     at   here   we   JIU   can   play
     'We can play HERE[, but we cannot play at all other places].'

(160') *Zhǐyǒu zài*   ZHÈR   *wǒmen*   *cái/*jiù*   *néng*   *wánr.*
    only   at   here   we   CAI/JIU   can   play
    'We can only play HERE.'

(160a) entails (160b), but as soon as the focus is overtly marked by an *only*-word as in (160'), *jiù* may not be used anymore.

Pairs of sentences – complex and simplex – for the opposition *dōu* vs. *yě* are given in (161) and (162).

(161) a. *Nǐ*   BÙ   *shuō,*   *wǒ*   *dōu*   *huì*   *zhīdao.*
     you   not   say   I   DOU   will   know
     'I'll even know it if you DON'T say it.'

    b. *Nǐ*   BÙ   *shuò,*   *wǒ*   *yě*   *huì*   *zhīdao.*
     you   not   say   I   YE   will   know
     'I'll also know it if you DON'T say it.'

(162) a. *Dìdi*   BĪNGQÍLÍN   *dōu*   *bù*   *xiǎng*   *chī.*
     younger.brother   ice-cream   DOU   not   want   eat
     'The little brother doesn't even want to eat ICE-CREAM.'

    b. *Dìdi*   BĪNGQÍLÍN   *yě*   *bù*   *xiǎng*   *chī.*
     younger.brother   ice-cream   YE   not   want   eat
     'The little brother doesn't want to eat ICE-CREAM, either.'

Both a-sentences entail the b-sentences, but the b-sentences do not entail the a-sentences; this is as predicted, because universal quantification (over alternatives) entails existential quantification. Examples (161') and (162') are the corresponding sentences with overt focus markers.

(161') *Jìshǐ*   *nǐ*   BÙ   *shuō,*   *wǒ*   *dōu/yě*   *huì*   *zhīdao.*
     even.if   you   not   say   I   DOU/YE   will   know
     'I'll even know it if you DON'T say it.'

(162') *Dìdi*   *lián*   BĪNGQÍLÍN   *dōu/yě*   *bù*   *xiǎng*   *chī.*
     younger.brother   even   ice-cream   DOU/YE   not   want   eat
     'The little brother doesn't even want to eat ICE-CREAM.'

These sentences illustrate the difference emerging in comparison with the corresponding pair *cái* vs. *jiù*: Both *dōu* and *yě* may be used in the presence of an overt focus marker which enforces the universal focus reading (i.e. quantification over each member of the domain of alternatives). It is true that universal quantification and existential quantification are not contradictory, so this might not be a surprising fact, but the analogous constellation involving negated existential quantification and negated universal quantification in (i) was handled differently by Mandarin grammar: The less specific marker (*yě*) may be used here, while it was bad in the previous case (*jiù* in (159') and (160')).

Sentence (163) is a reminder of the fact stated in section 4.3.5.B: *Jiùshì* marks its focus for negated universal quantification, and therefore, it is only compatible with parametric *yě* ($\exists$), but not with parametric *dōu* ($\forall$).

(163) *Jiùshì*   *nǐ*   BÙ   *shuō*   *wǒ*   *yě/???dōu*   *huì*   *zhīdao.*
     even.if   you   not   say   I   YE/DOU   will   know
     'I'll even know it if you DON'T say it.'

D. Subcontraries: *jiù* vs. *yě*

(164) provides a pair of sentences with a subcontrary relationship between the focus quantificational structures involved.

(164) a. GUÓWÁNG   LÁI   -*de shihou,*   *wǒ*   *jiù*   *qù.*
     king   come   -when   I   JIU   go
     'I go when the KING COMES[, but I will not go at all other times].'

    b. GUÓWÁNG   LÁI-*de shíhou,*   *wǒ*   *yě*   *qù.*
     king   come -when   I   YE   go
     'I also go when THE KING COMES.'

A subcontrary relationship has it that both subcontraries may be true, but they may not both be false. In this case we have to be especially careful not to confound the logical relationship holding among the complex propositions as such with the logical relationship holding among their quantificational structures in focus semantics. The subcontrary relation holding between the focus-semantic components of meaning in (164a) and (164b) does not predict that one of the two sentences should

be true, no matter what the circumstances are. This would be absurd. The subcontrary relation among the focus meanings will result in a contradiction if, in some context, either sentence is false, and the other were claimed to hold true. Suppose the situation is such that I even go when the king comes, i.e. the presupposition is that I go in all alternative situations, too. According to our argument repeated several times by now, the focus semantics associated with *jiù* as in (164a) is incompatible with such a situation, because this sentence presupposes that there is at least one alternative situation in which I will not go. So (164a) is inappropriate, but, (164b) is perfectly fine: If I go in all other situations, I also go in some other situation. The reverse argument can be stated in an analogous fashion. Suppose I only go if the king comes, but I am not interested in any other situations in which VIP's can be seen in public. In this scenario (164b) will not be the right thing to say, but (164a) will. The logic relationship between the focus semantic components of meaning in pairs of sentences contrasting *jiù* and *yě* is really that of subcontrariety.

Having gone through all the possible pairings, we may say that the predictions derived from the propositional logic of quantificational propositions are fully borne out: The quantificational square as depicted in Figure 4.5 reflects the real organization of the focus-semantic meaning components of sentences with parametric *cái*, *jiù*, *dōu* and *yě*.

4.5   RESIDUAL PARAMETRIC WORDS: *HÁI* 還 AND *ZÀI* 再

I shall now turn to some peripheral elements of the class of parametric words that have to be included in a complete description of the system of grammaticalized focus quantification in Mandarin. I will distinguish two types of such parametric words, and I will locate the overall position of these further elements within the system. I will restrict myself to a very sketchy discussion, hoping to be able to return to the issue in the future.

The first class of additional parametric words is represented by the word *biàn* 便, which is a one-hundred-percent variant of our familiar parametric word *jiù*, the only difference being the appropriate register of its use. *Biàn* may be used instead of parametric *jiù* without ever influencing grammaticality, and it is, e.g., regularly used as a substitute of *jiù* in newspaper writing; *Jiù* and *biàn*, moreover, interchange in other elevated registers of the written language.

The second class is more interesting. It includes at least the words *hái* 還 and *zài* 再.[46] Both of them relate to a quantificational type, but each of them reflects a more specific focus semantics going beyond the reflection of the mere quantificational type. I will look at them one by one.

Hái 還 'moreover; still' has recently been discussed by and Yeh (1998) and Liu (2000).[47] There are good reasons to analyze many uses of *hái* in the same way as the English scalar particle *still* or its German equivalent *noch*. The standard analyses of these words were developed by König (1977) and Löbner (1989), and Yeh's and Liu's analyses are based on their results. Here is an example of a non-parametric use of *hái*.

(165) *Lǎo Zhāng hái zài shuì jiào.*
   Old Zhang still ASP sleep
   'Old Zhang is still sleeping.' (Yeh 1998: 237)

The general idea of Yeh's (and also Löbner's) analysis is to say that, in a sentence like (165), *hái* 'still' signals two things. Apart from the assertion concerning the reference time (the moment of utterance in (165)), there must have been an earlier point in time at which Old Zhang was already sleeping; (165) would be false if Old Zhang had been asleep some time ago, but were no longer asleep at the reference time. If the time of Old Zhang's being asleep is marked by an interval p on the time line, the reference time of the assertion must be within p and to the right of some other contextually relevant point in time within p. (165) would be false if the non-p-interval had already started before the reference time. Note in passing that in sentences like (165), *hái* may always be dropped without influencing grammaticality.

Hái has developed a full-fledged parametric use in sentences as in (166). It may not be dropped, it must be preceded by its interacting focus, and it does not, by itself, trigger specific focus readings. The temporal scale indicative of the use as a scalar particle need not be traceable.

(166) a. [When it comes to leading the way for others, that's even more
        difficult, because ...]
        lián wǒ ZÌJǏ hái bù míngbái yīngdāng zěnme zǒu.
        even I self HAI not understand should how go
        'even I MYSELF do not know which way to go.'
        (cf. Eifring 1995: 337)

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[46] Probably *zǒng* 総, which means 'always, invariably' in its non-adverbial use, should also be included here as a specialized variant of parametric *dōu*. I lack sufficient data to make this point in a satisfactory way, so I will leave it at that.

[47] Alleton (1972) has also devoted a section of her book to *hái*, but she does not identify its parametric use.

tification. I must assume quite *ad hoc* that, in the case of *cái* vs. *jiù*, the more specific agreement marker/parametric word must be used if the specific interpretation is overtly encoded.[45] We will see that *dōu* and *yě* differ in this respect. Before turning to these words, let us study facts analogous to those in (159) for simple sentences. This is done in (160)/(160').

(160) a. *Zài*   ZHÈR   *wǒmen*   *cái*   *néng*   *wánr.*
           at   here   we   CAI   can   play
           'We can only play HERE.'

      b. *Zài*   ZHÈR   *wǒmen*   *jiù*   *néng*   *wánr.*
           at   here   we   JIU   can   play
           'We can play HERE[, but we cannot play at all other places].'

(160') *Zhǐyǒu*   *zài*   ZHÈR   *wǒmen*   *cái/*jiù*   *néng*   *wánr.*
          only   at   here   we   CAI/JIU   can   play
          'We can only play HERE.'

(160a) entails (160b), but as soon as the focus is overtly marked by an *only*-word as in (160'), *jiù* may not be used anymore.

Pairs of sentences – complex and simplex – for the opposition *dōu* vs. *yě* are given in (161) and (162).

(161) a. *Nǐ*   BÙ   *shuō,*   *wǒ*   *dōu*   *huì*   *zhīdao.*
           you   not   say   I   DOU   will   know
           'I'll even know it if you DON'T say it.'

      b. *Nǐ*   BÙ   *shuò,*   *wǒ*   *yě*   *huì*   *zhīdao.*
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           'I'll also know it if you DON'T say it.'

(162) a. *Dìdi*   BĪNGQÍLÍN   *dōu*   *bù*   *xiǎng*   *chī.*
           younger.brother   ice-cream   DOU   not   want   eat
           'The little brother doesn't even want to eat ICE-CREAM.'

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           'The little brother doesn't want to eat ICE-CREAM, either.'

Both a-sentences entail the b-sentences, but the b-sentences do not entail the a-sentences; this is as predicted, because universal quantification (over alternatives) entails existential quantification. Examples (161') and (162') are the corresponding sentences with overt focus markers.

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[45] The assumption is rendered less *ad hoc* by the fact elaborated on in footnote 44 above that the focus semantics associated with *cái* involves entailment, while that associated with *jiù* involves presupposition.

(161') *Jíshǐ*   *nǐ*   BÙ   *shuō,*   *wǒ*   *dōu/yě*   *huì*   *zhīdao.*
          even.if   you   not   say   I   DOU/YE   will   know
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These sentences illustrate the difference emerging in comparison with the corresponding pair *cái* vs. *jiù*: Both *dōu* and *yě* may be used in the presence of an overt focus marker which enforces the universal focus reading (i.e. quantification over each member of the domain of alternatives). It is true that universal quantification and existential quantification are not contradictory, so this might not be a surprising fact, but the analogous constellation involving negated existential quantification and negated universal quantification in (i) was handled differently by Mandarin grammar: The less specific marker (*yě*) may be used here, while it was bad in the previous case (*jiù* in (159') and (160')).

Sentence (163) is a reminder of the fact stated in section 4.3.5.B: *Jiùshì* marks its focus for negated universal quantification, and therefore, it is only compatible with parametric *yě* ($\exists$), but not with parametric *dōu* ($\forall$).

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D. Subcontraries: jiù vs. yě

(164) provides a pair of sentences with a subcontrary relationship between the focus quantificational structures involved.

(164) a. GUÓWÁNG   LÁI   *-de shihou,*   *wǒ*   *jiù*   *qù.*
           king   come   -when   I   JIU   go
           'I go when the KING COMES[, but I will not go at all other times].'

      b. GUÓWÁNG   *LÁI-de shihou,*   *wǒ*   *yě*   *qù.*
           king   come -when   I   YE   go
           'I also go when THE KING COMES.'

A subcontrary relationship has it that both subcontraries may be true, but they may not both be false. In this case we have to be especially careful not to confound the logical relationship holding among the complex propositions as such with the logical relationship holding among their quantificational structures in focus semantics. The subcontrary relation holding between the focus-semantic components of meaning in (164a) and (164b) does not predict that one of the two sentences should

be true, no matter what the circumstances are. This would be absurd. The subcontrary relation among the focus meanings will result in a contradiction if, in some context, either sentence is false, and the other were claimed to hold true. Suppose the situation is such that I even go when the king comes, i.e. the presupposition is that I go in all alternative situations, too. According to our argument repeated several times by now, the focus semantics associated with *jiù* as in (164a) is incompatible with such a situation, because this sentence presupposes that there is at least one alternative situation in which I will not go. So (164a) is inappropriate, but, (164b) is perfectly fine: If I go in all other situations, I also go in some other situation. The reverse argument can be stated in an analogous fashion. Suppose I only go if the king comes, but I am not interested in any other situations in which VIP's can be seen in public. In this scenario (164b) will not be the right thing to say, but (164a) will. The logic relationship between the focus semantic components of meaning in pairs of sentences contrasting *jiù* and *yě* is really that of subcontrariety.

Having gone through all the possible pairings, we may say that the predictions derived from the propositional logic of quantificational propositions are fully borne out: The quantificational square as depicted in Figure 4.5 reflects the real organization of the focus-semantic meaning components of sentences with parametric *cái*, *jiù*, *dōu* and *yě*.

4.5 RESIDUAL PARAMETRIC WORDS: *HÁI* 還 AND *ZÀI* 再

I shall now turn to some peripheral elements of the class of parametric words that have to be included in a complete description of the system of grammaticalized focus quantification in Mandarin. I will distinguish two types of such parametric words, and I will locate the overall position of these further elements within the system. I will restrict myself to a very sketchy discussion, hoping to be able to return to the issue in the future.

The first class of additional parametric words is represented by the word *biàn* 便, which is a one-hundred-percent variant of our familiar parametric word *jiù*, the only difference being the appropriate register of its use. *Biàn* may be used instead of parametric *jiù* without ever influencing grammaticality, and it is, e.g., regularly used as a substitute of *jiù* in newspaper writing; *Jiù* and *biàn*, moreover, interchange in other elevated registers of the written language.

The second class is more interesting. It includes at least the words *hái* 還 and *zài* 再.[46] Both of them relate to a quantificational type, but each of them reflects a more specific focus semantics going beyond the reflection of the mere quantificational type. I will look at them one by one.

Hái 還 'moreover; still' has recently been discussed by and Yeh (1998) and Liu (2000).[47] There are good reasons to analyze many uses of *hái* in the same way as the English scalar particle *still* or its German equivalent *noch*. The standard analyses of these words were developed by König (1977) and Löbner (1989), and Yeh's and Liu's analyses are based on their results. Here is an example of a non-parametric use of *hái*.

(165) *Lǎo Zhāng hái   zài   shuì jiào.*
       Old Zhang still   ASP   sleep
       'Old Zhang is still sleeping.' (Yeh 1998: 237)

The general idea of Yeh's (and also Löbner's) analysis is to say that, in a sentence like (165), *hái* 'still' signals two things. Apart from the assertion concerning the reference time (the moment of utterance in (165)), there must have been an earlier point in time at which Old Zhang was already sleeping; (165) would be false if Old Zhang had been asleep some time ago, but were no longer asleep at the reference time. If the time of Old Zhang's being asleep is marked by an interval p on the time line, the reference time of the assertion must be within p and to the right of some other contextually relevant point in time within p. (165) would be false if the non-p-interval had already started before the reference time. Note in passing that in sentences like (165), *hái* may always be dropped without influencing grammaticality.

Hái has developed a full-fledged parametric use in sentences as in (166). It may not be dropped, it must be preceded by its interacting focus, and it does not, by itself, trigger specific focus readings. The temporal scale indicative of the use as a scalar particle need not be traceable.

(166) a. [When it comes to leading the way for others, that's even more difficult, because ...]
          lián   wǒ ZÌJǏ hái bù   míngbái   yīngdāng zěnme zǒu.
          even I self HAI not understand should how go
          'even I MYSELF do not know which way to go.'
          (cf. Eifring 1995: 337)

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[46] Probably *zǒng* 总, which means 'always, invariably' in its non-adverbial use, should also be included here as a specialized variant of parametric *dōu*. I lack sufficient data to make this point in a satisfactory way, so I will leave it at that.

[47] Alleton (1972) has also devoted a section of her book to *hái*, but she does not identify its parametric use.

b. *BĀO-SHANG LIǍNG-KUÀI HÓNG-BÙ,*
   wrap-up   2-CL:piece   red-cloth
   hái   zhǐbuzhù   xué   ne.
   HAI   unable.to.stop blood   PRT
   'Even WRAPPING IT UP WITH TWO PIECES OF RED CLOTH could
   not stop the bleeding.' (Alleton 1972: 121)

c. *Suīrán JIĀ-LE   YĪ-CÉNG QĪ,   dànshi hái kěyǐ kàndechū.*
   although add-ASP 1-CL:layer paint but   HAI be.able.to.see
   'Although A LAYER OF PAINT HAS BEEN ADDED, one can still
   see it.' (hx: 255)

d. *Bùlùn   jià-gěi   shéi, hái bù shì yī-yàng áidǎ.*
   no.matter get.married-to who HAI not be 1-CL:kind be.beaten
   'No matter who it may be that a woman gets married to, that
   cannot count as being beaten.' (hx: 255)

If *dōu* or *yě* were used, each of the sentences in (166) would belong to a familiar sub-type of *dōu*'s or *yě*'s parametric uses. (166a) is an *even*-sentence as treated in 4.3.2, and instead of *hái*, *yě* or *dōu* could be used, but one of the three words must be used. (166b) is of the same kind, the only difference being that the *even*-focus is not a nominal, but rather a gerundial predicate in subject function. (166c) is a concessive sentence (cf. section 4.3.5), and in (166d) a free-choice interpretation of the *wh*-word/indefinite pronominal as discussed in section 4.3.4 is intended.

It is not difficult to see that the lexical semantics of *hái* in its original focus-sensitive use as a phasal adverb and the conditions of use triggering parametric *yě* (and also *dōu*) are partially identical. *Hái*'s basic function presupposes the existence of an earlier point in time at which the proposition asserted to be true at the reference time was already true. This is a special kind of existential quantification over the domain of alternatives, and I claim that it is this similarity which has allowed *hái* to enter into the paradigm of parametric words. Two differences come to mind when the distribution of parametric *hái* as opposed to its lexical origin *hái* 'still', and its paradigmatic partner *yě* are compared. Although parametric *hái* is compatible with temporal interpretations of the *still*-kind, it does not require a specific temporal setting anymore. This is clearest in (166d) where a generic statement is made. Its interpretation presupposes a scale, but it is not temporal. It is a scale of potentially cruel kinds of behaviour independent of time. This nicely illustrates the semantic bleaching that is typical of grammaticalization: The use of an item is less open to the choice of speakers ((166d) without *hái* is ungrammatical), and the semantics it encodes have become less specific. Parametric *hái* is not a variant of parametric *yě*, though. It is more spe-

cific than *yě* in that the considered alternatives must be lower on the relevant scale than the asserted value. This is, of course, part of *hái*'s lexical inheritance, and this relic has a neat consequence: Parametric *hái* is excluded in negative polarity contexts in which no lower values may be assumed to exist; cf. (167).

(167) *Wǒ   tóu   YĪ-DIǍNR   dōu/yě/*hái   bù   tòng.*
       I   head 1-CL:bit   DOU/YE/HAI   not hurt
       'My head doesn't hurt THE SLIGHTEST BIT/AT ALL.'

I think it has become clear in this short survey of parametric *hái*-uses how a more specific parametric word may have its position within the system of grammaticalized markers of focus quantificational types in Mandarin. I will try to do the same for *zài* in the paragraphs to follow.

Zài 再is another one of the notoriously polysemous items in Mandarin dictionaries (cf. the discussion of *zài* as a negative polarity item in section 4.3.3.A). Its synchronically basic use is that of an adverb of (future/hypothetical) repetition 'once more (in the future/in a hypothetical situation)'. (168) is an example of this basic use.

(168) *Wǒ   zài   hē   yī-bēi.*
       I   once.more drink 1-CL:cup
       'I'll have another glass.'

In this use, *zài* may usually refer to future or hypothetical situations only, so we often find it embedded under appropriate modal verbs, and in commands and requests. Situations in which the reference point is not the time of utterance, but rather a moment in the past, are indicative of the fact that what really matters is posteriority (cf. Liu 1999). Moreover, Alleton (1972: 103) points out that in temporal adverbial clauses embedded under *-de shíhou* '(the time) when' the posteriority restriction is neutralized.

Concerning *zài*'s lexical semantics, we may say that its felicitous use presupposes that an action identical in type to the one projected in the future, or in a hypothetical situation must precede, or have preceded the future or hypothetical action.

In contradistinction to the case of *hái*, this only helps us very little when it gets to analyzing the parametric use of *zài*. Some pertinent examples have been collected in (169).

(169) a. *Yīshì dāngqián,   xiān ti zìjǐ   dǎ suàn,*
         whatever.it.is   first for self consider
         RÁNHÒU   zài   ti   biérén   dǎ suàn.
         after.that   ZAI for other.people consider

'In all kinds of matters, people think of themselves first, and (only) THEN {will they/they will} think of other people.' (hx: 716)

b. *WŎ HUÍQÙ KĂOLÛ YĪ-XIÀ,* *wŏ* *zài gàosu nĭ zěnme bàn.*
   I return ponder 1-CL:bit I ZAI tell you how handle
   'I'LL RETURN HOME AND THINK ABOUT IT, and (only) THEN {will I/I'll} tell you what to do.' (rp: 19)

c. *WŎ* *DĚNG JĬ-TIĀN,* *zài* *hé* *niáng shuō qu.*
   I after some-CL:dayZAI with mum speak go
   '(Only) AFTER A COUPLE OF DAYS {will I/I'll} talk to Mum.' (Alleton 1972: 114)

d. *MÍNGNIÁN zài kàn ba!*[48]
   next.year ZAI see PRT
   'Let's wait until NEXT YEAR and decide (only) THEN.' (Alleton 1972: 100)

With the exception of some data in the following chapter, there are probably few sentences in this study which are as hard to translate into English as these examples. The problem is that the interpretation of the sentences somehow oscillates between readings with, or without *only*. Alleton (1972) analyzes the function of parametric *zài* as that of a more specific paradigmatic partner of parametric *cái*. She justifies this move by saying that parametric *zài* may always be replaced by *cái* without influencing grammaticality or the felicity of the utterance, but the reverse is not true: *Zài* may not always replace *cái*.

I analyze parametric *zài*-sentences as follows: First, the asserted sentence and the alternative sentence(s) must be ordered with respect to a temporal scale. This may be the case in *cái*-sentences, but it need not. Second, only a single alternative is considered, and this single alternative is excluded. I thus claim that the cardinality of the set of focus alternatives of *zài*-sentences is restricted to 1. In such a situation it makes no difference whether one assumes negated existential quantification or negated universal quantification: If there is only one alternative to be considered, excluding some alternative, or all alternatives does not make a difference. This is in accord with what Alleton says, except that it would be equally plausible to state the analysis in *jiù*-terms, i.e. in terms of the parametric word reflecting negated universal quantification over the domain of alternatives. Applied to the sentences in (169), this analysis pre-

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[48] This sentence possibly has a second reading in which *zài* is interpreted as 'once more' as discussed above: 'We'll have another look at it next year'. This reading is irrelevant here.

dicts that the points in time between the time of utterance (or the generic anterior time) and the reference time do not matter at all. In (169d), for instance, only the binary choice between deciding now, or in a year matters, the points in time in between are simply not at stake. This analysis does justice to the intuition that an account in terms of a specialized *only*-semantics would somehow overstate the case: Parametric *zài*-sentences simply do not imply anything about possibly many alternative sentences, they stick to a single alternative. Therefore, they sound a lot more moderate and, in directive speech-acts, less harsh than otherwise identical *cái*-sentences.

My concluding remark on parametric *zài* concerns the particle's lexical inheritance. Recall that *zài*'s basic use is translated as 'once more' into English, and I said above that this only gives us a small hint at the analysis of parametric *zài*. It does give a hint, though. Both repetitive *zài* and parametric *zài* involve reference to a singular thing: Numbers of repetitions for the *once-more*-use, and numbers of focus alternatives along a temporal scale for the parametric use.

As in the case of parametric *hái*, our tool-box has proved to be sufficiently equipped for the handling of parametric *zài*. While *hái* has been the first Mandarin case to show us that alternatives of parametric sentences may have to be ordered along a scale, parametric *zài* has added a restriction on the cardinality of the set of focus alternatives.

4.6 CONCLUSIONS OF CHAPTER 4

In this chapter I have established the following major points.

The four parametric words discussed in this study constitute the core of the Mandarin system of focus quantification. Each of the four words represents one basic quantificational type.

Parametric *cái* (see section 4.1) reflects negated existential quantification over the domain of focus alternatives ($\neg\exists$). Apart from covering the empirical domain of *only(-if)*-sentences, I have also proposed a solution to the notoriously difficult *not-until*-readings. This solution is based on the assumption that temporal adverbials in *cái*-focus are interpreted like English *until*-adverbials.

The focus quantificational type of parametric *jiù* (see section 4.2) is negated universal quantification over the domain of alternatives ($\neg\forall$). This analysis allows us to derive the use of *jiù* in complex sentences with a focus, or a C-topic in the subordinate clause which come out as conditional sentences in English. It could be shown that the meaning of *if*-conditionals and that of *jiù*-conditionals do not fully coincide, but they are sufficiently similar to constitute good translational equivalents in

most cases. The domain of focus alternatives relevant in *jiù*-sentences must be able to contain members referring to situations that differ in factuality from the asserted proposition.

Parametric *dōu* (treated in section 4.3) is associated with universal quantification over the domain of focus alternatives ($\forall$). This analysis is able to cover *dōu*'s use in *even*-sentences, in negative-polarity contexts, in concessive conditionals and, with some extra-assumptions, also its use in sentences with free-choice interpretations of *wh*-words/indefinite pronominals.

Parametric *yĕ* (likewise covered in section 4.3) reflects existential quantification over focus alternatives ($\exists$). As with *jiù*, the alternative situations may differ in factuality, thereby allowing parametric *yĕ* to be used in concessive sentences. Otherwise, the distributions of *dōu* and *yĕ* overlap heavily, and this can be made to follow from the subalternate relationship of the quantificational types reflected by *dōu* and *yĕ*.

If pairs of sentences differing only with regard to the parametric words used are tested against the background of what we know about the logical relations that hold among the four basic quantificational types, the results are as predicted. This kind of testing was done in section 4.4.

There are more specific members of the paradigm (*hái* and *zài*), which, apart from reflecting one of the basic types of focus quantification, also presuppose more specific things: A scalar ordering of alternatives in the case of *hái*, and a cardinality of the set of relevant alternative anterior points in time which is restricted to 1 in the case of *zài* (see section 4.5).

Table 4.3 depicts the focus-semantic and presuppositional endowments of those contexts which trigger the use of parametric words. A representation in terms of features is chosen, but nothing hinges on this (except for the fact that I claim that the whole system of focus quantification in Mandarin is organized in categorical terms, and not in terms of fuzzy boundaries or degrees). Features that are left unspecified for single focus types are not included in the feature representations of the respective focus types. I contract the features of quantificational types and negation vs. assertion into a single feature, except in the case of *zài*, for which I claim that the difference between existential and universal quantification is irrelevant because of the cardinality restriction on *zài*-alternatives.

Table 4.3 concludes the main part of this study.

Table 4.3 Focus semantic properties of contexts with parametric words

PARAMETRIC WORD		TYPE OF FOCUS QUANTIFICATION	EXPLANATIONS
cái	才	$[\neg\exists]$	negated existential quantification over alternatives entailed
jiù	就	$[\neg\forall]$	negated universal quantification over alternatives presupposed
dōu	都	$\begin{bmatrix} \forall \\ \text{FACT(ALT)} \end{bmatrix}$	universal quantification over alternatives presupposed factuality of alternatives
yĕ	也	$[\exists]$	existential quantification over alternatives presupposed
hái	還	$\begin{bmatrix} \exists \\ \text{SCAL}^-\text{(ALT)} \end{bmatrix}$	existential quantification over alternatives presupposed scalar ordering between focus and alternative; alternative lower on the scale
zài	再	$\begin{bmatrix} \text{OUTER NEGATION} \\ \text{ANTERIOR(ALT)} \\ |\text{ALT}| = 1 \end{bmatrix}$	outer negation of underspecified existential or universal quantification over alternatives temporal ordering between focus and alternative; alternative earlier in time set of alternatives contains a single member

5 PROBLEMS AND REFINEMENTS

This chapter has four parts. Section 5.1 describes a problem that arises in many sentences with parametric *cái*, *jiù* and *zài*: At a first glance, facts of syntactic and of semantic scope systematically fail to coincide, and three different solutions to the problem will be shown not to solve the problem in a satisfying way. Only a more radical proposal involving tripartite modal structures, combined with the assumption of matrix clause restrictors, will be able to settle the problem. Section 5.2 picks out a well-defined class of sentences with parametric *cái* and *jiù* in which the predicates following the particles have acquired a conventionalized modal function. In section 5.3 I will review a three-way ambiguous English sentence and its univocal translations into Mandarin. All of them are relevant to the discussion of parametric words and the problems of scope interaction, with the latter being the recurrent topic of this chapter. The final section 5.4 characterizes the conditions in which more than a single parametric word may be used per clause, examples are given of each possible combination, and some tasks for further research are delimited.

5.1 PROBLEMS OF SCOPE INTERACTION AND SYNTAX

5.1.1 The problem stated

To get a first impression of the kind of data to be dealt with in this section, have a look at (1) (cf. Eifring 1995: 231).[1]

(1) *Tā   bìxū   qù dàshǐguǎn, cái   néng shēnqǐng   qiānzhèng.*
     (s)he must   go embassy   CAI   can   apply.for   visa
     '(S)he must go to the embassy to be able to apply for a visa.'/
     'Only if (s)he goes to the embassy can she apply for a visa.'

Upon first inspection, (1) seems to be an average *cái*-sentence: The first conjunct delimits the set of situations within which the second conjunct is true, and no other possibilities exist. The problem has to do with the use of *bìxū* 'must' in (1). If we render the sentence as an *only-if*-conditional in English without omitting this modal verb, we get a wrong translation: *Only if (s)he has to go to the embassy can (s)he apply for a visa.* The

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[1] I will not mark foci in this section, because the information structure of the sentences is not our major concern here.

obligation to go to the embassy doesn't, of course, influence the out-
come, it is only the question of going or not going to the embassy that
matters. If we want to retain the modal verb in our translation, we must
resort to a purposive construction as in the first translation of (1). If we
prefer a conditional construction, we must drop the modal of necessity.
In case we decide in favour of a purposive construction (and many re-
searchers tacitly do so without mentioning the consequences; cf. numer-
ous pertinent examples in Alleton 1972, Paris 1981 or Eifring 1995), we
face the problem that the facts of syntactic dominance are switched: In
the first translation of (1), the main clause precedes the subordinate pur-
pose clause, but in the Mandarin sentence the first clause is subordinate.
Readers who are suspicious about this point may want to study (2), an
attested example which settles the case.

(2)   *Yào   děng nǐmen   jiāo-le   jièshàofèi   yǐhòu,*
      it.is.necessary wait you   pay-ASP commission after
      cái   kěyǐ   gěi   nǐmen   ānpái.   (cf. rp: 26)
      CAI   can   for   you   arrange
      'We have to wait until you have paid the commission before
      things can be arranged for you.'/'Only after you have paid the
      commission can things be arranged for you.'

In (2) the clause-final marker of subordinate temporal clauses *yǐhòu*
'after' is used, and thus there is no doubt that the first conjunct of (2) is
a subordinate clause. From the point of view of syntax, the second Eng-
lish translation should thus be given preference. If we want to retain the
impersonal necessity operator *yào* 'it is necessary' of the first clause, we
are forced to switch to a purposive (temporal) construction with a su-
perordinate initial clause in English. Whatever we do, we must ignore
one fact: Either the overall syntax, or the modal operator in the first
clause. Sentences as in (1) and (2) are by no means marginal phenom-
ena; they frequently occur in speech and in writing. A collection of par-
allel data for *cái, jiù* and *zài* is given in (3) through (5).[2]

(3)   a. *Tā   [bìxū   xià   yǔ]   cái   lái.*   (Eifring 1995: 223)
         (s)he must   fall   rain CAI come
         'It must rain in order for him/her to come.'/
         'Only if it rains does (s)he come.'
      b. *Tàitài   yīdìng   yào   zhǎngwò xiānshēng-de   hébāo,*
         wife   definitely must control husband-ATTR   purse

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      xiānshēng   cái   bù   huì   luànlái.   (rp: 26)
      husband   CAI not will get.in.disorder
      'A wife must definitely have control over the purse of her hus-
      band in order for the husband not to do silly things.'/
      'Only if a wife has control over the purse of her husband will
      her husband not do silly things.'

(4)   a. *Zhǐ-yào   sān-ge   rén*
         only-need   3-CL   people
         jiù   bāndedòng zhè-jiā   gāngqín le. (cf. section 5.3)
         JIU   can.move this-CL   piano   LE
         'Only (as few as) three people are needed to be able to move
         this piano.'/'If there are three people this piano can be moved.'
      b. *Tā   zhǐ-yào   qù dàshǐguǎn jiù   néng   shēnqǐng qiānzhèng.*
         (s)he only-must go embassy JIU   can   apply.for visa
         '(S)he only has to go to the embassy to be able to apply for a
         visa.'/'If (s)he goes to the embassy, she can apply for a visa.'

(5)   *Wǒmen   zhǐhǎo   xiān   huíqù   ná-le   qián*
      we   must   first return take-ASP money
      zài   lái   bàoming. (rp: 51)
      ZAI   come sign.up
      'We'll have to return home first and get the money before we can
      come back and sign up.'/'We'll only come back and sign up after
      we have returned home to get the money.'

5.1.2 Some unsatisfactory solutions

The dilemma itself, and some possible analyses are schematically repre-
sented in (6) and (6').

(6)   Sentential make-up: [[NEC p] *cái/jiù/zài* q]
      translation into English: NEC[p [*in order for* q *to come about*]]
                          or: (only) ~~NEC~~ *if* p, *then* q[3]
(6') a. The implicit anaphora solution:
         NEC p {& [*if* p}implicit, *cái/jiù/zài* q]
      b. The reanalysis solution:
         (NEC>)CONJ p, *cái/jiù/zài* q
      c. The ad-hoc means-clause solution:
         [NEC p]means-clause, *cái/jiù/zài* q(, but interpret NEC with matrix scope!)

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[3] Strictly speaking, this representation is not quite exact if *jiù*-sentences are to be cov-
ered. Recall that the semantics of *jiù*-conditionals differs from *if*-conditionals: *Jiù*-
conditionals exclude at least one alternative.

I will briefly discuss each of these three attempts at resolving the paradox, but all of them will be discarded. The first solution is probably what comes to mind most easily when confronted with the problem: Why not simply say that sentence (3a) is interpreted as 'It has to rain, and only if it rains does (s)he come'? Note that it is a cross-linguistically attested phenomenon to find resumptive elements that do not include the modal information of their antecedents; cf. (7).

(7)   *You have to practise, only then can you win.*

In (7) the antecedent of *then* is *you practise*, and not *you have to practise*, and this would be similar to the Mandarin case if we opted for the implicit anaphora solution. An analysis along these lines might thus really be possible, but at least one problem would have to be tackled to make it work: The sentence in (7) would be fine without the first clause; we would predict, then, that parallel Mandarin sentences should be fine without their first clauses, too, the only difference to the English sentences being that the anaphoric element is implicit. What we find is that none of the sentences discussed above is grammatical or has a parallel reading if the first clauses are dropped.

The reanalyis solution would say that the alleged necessity operators in (1) through (5) are really subordinating conjunctions, and that they are only diachronically related to the necessity operators. This solution has something for it, because the undoubtedly subordinating conjunction *yàoshi* 'if' seems to have developed along precisely these lines (cf. the identical character 要 'yào' in *yàoshi* and in (*zhǐ-*)*yào* as in (2) or (4b)). If we were to adopt this analysis, we would be confronted with the problem of a systematic homonymy between necessity operators and subordinating conjunctions, because all necessity operators may be used in sentences of the type discussed here. Another argument against the reanalysis solution is the strong intuition that the allegedly bleached necessity operators in the above sentences are not at all void of modal meaning.

The ad-hoc means-clause solution is the most agnostic one: It would amount to saying that Mandarin, in contradistinction to other languages, does not make use of subordinate p u r p o s e clauses in the cases at hand, but rather of subordinate m e a n s clauses such that what amounts to purpose clauses of other languages are the matrix clauses in Mandarin. This would switch the facts of subordination around. We would then have to stipulate that the (necessity operator of the) means clause takes

semantic scope over the purpose clause, thereby running against the syntactic facts.

Whichever solution from among the three possibilities in (6) one chooses, one will always have to accept some undesired consequence. This result is so unsatisfactory that we should try a bit harder. In the end, these constructions, if used in ordinary language, do not have the slightest "feel" of sentences with untidy scopal relations. By turning to the quantificational structure of modality in the following sub-section, I want to sketch along what lines a more appropriate analysis will probably have to be developed.

5.1.3   Solving the problem with an unusual constituency of tripartite structures

One way to approach the problems of scope and subordination in sentences like (8) (=(1)) is to say that the focusing on conditional vs. purposive constructions is misguided.[4]

(8)   *Tā   bìxū   qù dàshǐguǎn, cái   néng shēnqǐng   qiānzhèng.*
      (s)he must go embassy   CAI   can   apply.for   visa
      '(S)he must go to the embassy to be able to apply for a visa.'/
      'Only if (s)he goes to the embassy can she apply for a visa.'

So far, we have always pretended that we have to decide in favour of one of these options, each of them leading to its own paradox: Either the syntactic facts of subordination and semantic scope relations fail to coincide, or the modal as such is in the way. An alternative way of analyzing sentences as in (8) is the following: In the tripartite quantificational structure underlying these modalized sentences, the modal constitutes the quantifier, the subordinate clause represents the nuclear scope, and the main clause encodes the restrictor, in this case the circumstantial modal base or accessibility relation. Since no inherent hierarchy exists between the three ingredients of quantification (cf. Partee 1995: section 3.3), the fact that Mandarin should assign the restrictor a superordinate syntactic position is not a problem. To understand this analysis, we will have to familiarize ourselves with the semantic theory of modality put forward by

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[4] The revision of this section has benefitted a lot from Kai von Fintel's teaching at the DGfS/LSA Summer School held at Düsseldorf in July 2002. While the sloppiness of the implementation is my fault, Kai's class has opened my eyes to the true constituency of modality, and it has enabled me to understand Kratzer's (1981, 1991a) theory more thoroughly. The second major stimulus was Partee's (1995) work, which I had read a long time ago, but could, at that time, not understand to the degree that was necessary to really be of any help.

Kratzer (1981, 1991a). I present a slightly more detailed introduction to her theory here, which is justified by the fact that we will be able to put Kratzer's theory to a second use in section 5.2. The way I present Kratzer's theory does not do full justice to Kratzer's explicit work. Still, I hope that its gist is fully preserved in the way I make use of it.

Kratzer claims that the notional category of modality can be parametrized along three dimensions.

The first dimension concerns the modal force of an instance of modalization: Are we dealing with necessity, weak necessity, a good possibility, impossibility, or any other modal force? A suggestive phrasing of what matters for dimension 1 is: 'How strong is the necessity or the possibility?' If mapped to a quantificational structure, this dimension amounts to the quantifying operator of a tripartite quantificational structure. The most typical quantifiers are the universal quantifier $\forall$ (this amounts to necessity), and the existential quantifier $\exists$ (this amounts to possibility).[5]

Dimension 2 is concerned with the modal base: Is the necessity or possibility stated with respect to what follows from facts, or with respect to what follows from knowledge? The second case is called epistemic modality: The possibility or necessity is stated with regard to what the speaker knows, and what can be concluded from this knowledge. The other possibility is called 'circumstantial' by Kratzer; in other traditions it is often referred to as 'root modality'. In this case we do not ask 'What may or must follow from our knowledge?', but rather 'What may or must follow from the (accidental) facts?' Kratzer has demonstrated that the distinction between epistemic and circumstantial modality must lie at the heart of each satisfactory theory of modality, a fact that had previously been overlooked. In earlier theories different sub-kinds of circumstantial modal bases, and the epistemic modal base, which is situated one level up, were treated on a par as different kinds of 'accessibility relations'. What matters here is that circumstantial modal bases often have an *ad-hoc* flavour to them, or a sense of being accidental. Take, for instance, the following sentence: *Given that his teacher is so strict, Joey must do his homework even if he's sick.* In this sentence, the necessity that Joey must do his homework is dependent on the accidental fact of his teacher's being so strict. If the teacher were not as strict, the necessity would not

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[5] I will only allude to Kratzer's implementation in terms of possible worlds in the following. The general idea of a possible-worlds account of modality has it that the (linguistic) context of a modal quantifier specifies the type of possible worlds in which the embedded state of affairs holds as often as is defined by the quantifier. More on this will be said immediately below when the modal base and the ordering source are introduced.

exist, something that is easy to imagine. In a possible-worlds account one would say that in all the possible worlds that accord to the strict standards of Joey's teacher, Joey will do his homework.

The third dimension relates to the ordering source. The guiding question of this dimension is: 'In which system does the necessity or possibility hold?' Ordering sources are given by what the law provides, what is a law of nature, what is good for you, what is moral, what we hope, what is rational, what we aim at, etc. All of these ordering sources are sub-types of circumstantial modal bases. A necessity or possibility relating to one of these ordering sources will often not be a necessity or possibility with regard to other ordering sources. While it is, for instance, a moral or legal necessity not to murder anyone, murder does not go against any law of nature. On the other hand, to throw an apple in the air so that it never falls down again may not be a possibility in terms of the laws of nature, but it is not forbidden. A second characteristic of ordering sources is that they define possible worlds that may be closer to, or further away from the perfect possible worlds with regard to the necessity or possibility at hand. Kratzer (1991a: 646f) provides an example involving a person with tuberculosis. Given the circumstantial information that the patient's lungs have an affliction, and given that the climate in Davos is better for people with lung problems than the climate in Amsterdam, (9) is a possible advisory sentence.

(9)   *Given your state of health you'd be better off going to Davos than to Amsterdam.*

The modal force in (9) is necessity: The sentence is about something the addressee must, or ought to, do. The modal base is circumstantial. The necessity does not follow from any conclusions arrived at by pure reasoning, but by the co-evaluation of facts of the real world. The modal ordering source is the degree to which an action is good for the addressee, and this ordering source ranks different possible worlds: Given the addressee's tuberculosis, possible worlds close to the perfect worlds in terms of what is good for the addressee, will have the addressee go to Davos, slightly more distant possible worlds will, e.g., have the patient go to the mountainous parts of Bavaria, and worlds quite distant or dissimilar from the perfect worlds in terms of what is good for the patient, will have the addressee go to Amsterdam. In other words: The ordering source and the modal base restrict the possible worlds in which the state of affairs in the scope of the necessity or possibility operator holds. Phrases like *given what is good for you in your state of health* act like

restrictors over possible worlds. To arrive at the relevant possible world(s), we use the implicit or contextual restrictors, and the explicit restrictor *given what is good for you in your state of health* such that we arrive at the set of worlds in which only things are the case that are good for people with lung diseases. All of these worlds will have the patient go to Davos, and necessity in our case is nothing but this very universal quantification over possible worlds. The proposition embedded under the modal constitutes the third component of the quantificational structure, i.e. the nuclear scope. A way to think of tripartite modal structures in terms of functions is to say that the modal base and ordering source define the domain of the quantifier function, while the truth or falsity of the nuclear scope wrt. to the domain constitutes the value of the quantifier function. (10a) provides a partitioning of a different modal tripartite structure, and (10b) is a paraphrase making use of the above reasonings.

(10)   a. [*For you to be able to apply for a permission*]RESTRICTOR, [*it is necessary*]QUANTIFIER *that* [*you go to the office*]NUCLEAR SCOPE.

   b. [All]QUANTIFIER the possible worlds which are [such that you can apply for a permission]RESTRICTOR, are [such that you go to the office]NUCLEAR SCOPE.

Now we have all that we need to understand our Mandarin construction. Note that the quantificational components of (10a) can be mapped nearly one to one onto the ones in (11) (=(1)/(8)).

(11)   [*Tā   bìxū   qù   dàshǐguǎn*]NUCLEAR SCOPE + QUANTIFIER,
       (s)he   must   go   embassy
       cái   [*néng   shēnqǐng   qiānzhèng*]RESTRICTOR.
       CAI   can   apply.for   visa
       '(S)he must go to the embassy to be able to apply for a visa.'/
       'Only if (s)he goes to the embassy can she apply for a visa.'

A modified paraphrase which makes use of our new insights is presented in (11').

(11')   '[All]QUANTIFIER the possible worlds which are [such that (s)he can apply for a visa]RESTRICTOR are [such that (s)he goes to the embassy]NUCLEAR SCOPE.'

The only unusual thing about Mandarin now is that Mandarin allows for restrictors that are main clauses. But, as Partee (1995: section 3.3) has pointed out, tripartite structures bring along no inherent binary branching. If, in a language like Mandarin, the restrictor may be higher in the modal structure than the combination of quantifier and nuclear scope,

there is nothing revolutionary about this fact. Another generalization that we are now able to state is that, generally, only circumstantial modal bases are spelled out by the main clauses of the pertinent sentences.

We are now in a position to reassess all of the formerly problematic cases. This is done, by way of explicit quantificational paraphrases, in the translations of (12) through (14).

(12)   a. *Tā   [bìxū   xià   yǔ]   cái   lái.*   (Eifring 1995: 223)
          (s)he must   fall   rain   CAI   come
          '[All]QUANTIFIER the possible worlds which are [such that (s)he comes]RESTRICTOR are [such that it rains]NUCLEAR SCOPE.'

   b. *Tàitài   yīdìng   yào   zhǎngwò xiānshēng-de   hébāo,*
       wife   definitelymust   control husband-ATTR   purse
       xiānshēng   cái   bù   huì   luànlái.   (rp: 26)
       husband   CAI   not   will   get.in.disorder
       '[All]QUANTIFIER the possible worlds which are [such that husbands don't get out of control]RESTRICTOR are [such that their wives control their husbands' purses]NUCLEAR SCOPE.'

(13)   a. *Zhǐ-yào   sān-ge   rén*
          only-need   3-CL   people
          jiù   bāndedòng zhè-jiā   gāngqín le. (cf. section 5.3)
          JIU   can.move this-CL   piano   LE
          '[All]QUANTIFIER the possible worlds which are [such that this piano can be moved]RESTRICTOR are [such that only three people need be there]NUCLEAR SCOPE.'

   b. *Tā   zhǐ-yào   qù dàshǐguǎn jiù   néng   shēnqǐng qiānzhèng.*
       (s)he only-must go embassy   JIU   can   apply.for visa
       '[All]QUANTIFIER the possible worlds which are [such that (s)he can apply for a visa]RESTRICTOR are [such that she only has to go to the embassy]NUCLEAR SCOPE.'

(14)   *Wǒmen zhǐhǎo   xiān   huíqù   ná-le   qián,*
        we   must   first   return   take-ASP money
        zài   lái   bàomíng. (rp: 51)
        ZAI   come   sign.up
        '[All]QUANTIFIER the possible worlds which are [such that we are coming again to sign up]RESTRICTOR are [such that we have returned home to fetch the money before]NUCLEAR SCOPE.'

Cái comes to be used in (11) and (12) because, instead of the eventuality in the preceding nuclear scopes, no other eventuality (from among the set of alternatives) may hold. *Jiù* in (13) is used because some non-

trivial alternatives to the nuclear scopes might lead to the same result, but some do not. *Zài* in (14) may be used because, in a way similar to the *cái*-cases, no other eventuality in the nuclear scope may hold. Additionaly, the temporal setting of the eventuality expressed in the first clause must be temporally prior to the eventuality expressed in the second clause, and the number of alternatives must be restricted to one (in the context from which (14) is taken, the single relevant alternative is to sign up immediately). The only thing that remains unsatisfactory in the paraphrases of the examples in (13) is the fact that, in order to be able to use *only* as required by the make-up of *zhǐ-yào*, a modal of necessity must be used in the paraphrase of the nuclear scope, even though this ought to be covered by the universal quantifier already. However, this does not constitute an inconsistency in the proposed analysis, it is just a distant reflex of the fact that English simply does not allow for a constituent comprising the quantifier plus the nuclear scope which then combines with the restrictor, and this still holds true of the quasi-logical paraphrases given. This being so, the Mandarin nuclear scopes in (13), but not the English ones, end up in the syntactic a n d i n t h e s e - m a n t i c scope of *zhǐ-* 'only-' if *zhǐ* attaches to the quantifier.

Note, finally, that this analysis will not just solve the *zhǐyào*-problem that has repeatedly kept us busy in this study (cf., for instance, section 3.2.1). It solves the recurrent problem of quantifiers or modals in subordinate clauses that have matrix scope. Among the other items that belong to this class are *yào* 'must', *bìxū* 'must' and *chúfēi* 'only if; must' (cf. Eifring 1995: ch. VI.2).

5.2   MODALIZING USES OF PARAMETRIC *CÁI* AND *JIÙ*

A sub-class of contexts in which parametric *cái* and *jiù* occur has developed a conventionalized modal meaning.[6] These contexts will be the topic of the present section, and I will argue that Mandarin has a conventionalized system of expressing the modal ordering source or accessibility relation as defined by Kratzer (1981, 1991a).

The examples in (15) illustrate the phenomenon.

(15) a. *Nǐ   zhīdao   jiù   hǎo   le!*   (rp: 17)
       you   know   JIU   good PRT
       'I'm glad you know it!'/'I wish you knew it!'/
       'I wish you'd known it!'

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      b. *Tā   yīngdāng lái   kàn wǒ cái   duì!* (cf. Alleton 1972: 138)
         (s)he should   come see I CAI   right
         '(S)he should really come and see me!'

Take (15a) first. If we translate this sentence as a conditional – recall that conditionals are usually a good translational option in the absence of more specific markers in complex *jiù*-sentences – we would get *If you know it, it is fine*. This is not outright false, but it misses an important point: What the use of *hǎo* '[literally:] good' contributes in (15a) is not as non-specific as the literal meaning of *hǎo* suggests.[7] The more adequate translations of the sentence all say something about the speaker's desires or hopes (that have actually come true in the first translation). Likewise, (15b) does not mean 'Only if (s)he comes and sees me is it correct.[8] Instead, the sentence has a component of meaning which says that the only kind of proper behaviour that the speaker can think of in the situation at hand would be for the person talked about to visit him or her. We thus have an interpretational surplus in these sentences, and we cannot derive it from what we know about the meanings of the involved expressions and their interaction alone.

The discussion to follow will proceed in three major steps. I will first propose some diagnostics to delimit from the usual parametric cases the sub-class of parametric *cái/jiù*-uses that are of interest here (section 5.2.1). I will then turn to Kratzer's theory of modality, I will identify the general theoretical component that matters in the case at hand, and I will move on to propose more specific meanings for the different conventionalized predicates that may follow *cái* and *jiù* in the modalizing use (section 5.2.2). As a last step, I will again try to integrate this special use into the general picture of what we know about parametric uses of *cái* and *jiù*, and I will give a schematic overview of the different components of meaning present in sentences with modalizing uses of *cái* and *jiù* (section 5.2.3).

5.2.1 Diagnostics of the modal use type

I can think of four properties that are indicative of the modal use within the parametric use. The first one has already been mentioned: The overall meaning of sentences as in (15) does not follow from what we know about its components; specifically, the predicates following *cái* and *jiù* seem to encode certain conventionalized meanings different from their literal meanings.

The second property of modalizing *cái/jiù*-sentences is the fact that the predicates following *cái* or *jiù* are never negated and that, in general, nothing may intervene between *cái/jiù* and the following predicate. This is illustrated in (16). (17) allows us to see that normal parametric uses of *cái* or *jiù* are not subject to any such restrictions.

(16) a. *Nǐmen   yīnggāi   jiào   wǒ 'āyí'   cái (*bù/*hěn)   duì!*
       you   should   call   I   aunt   CAI not/very   correct
       'You should really call me "Aunt"!'/
       'Be good kids and call me "Aunt"!' (rp: 2)

    b. *Yǐhòu   na,   wǒ   zǎo   yī-diǎn   huí-lái*
       afterwards PRT   I   early 1-CL:bit return-come
       *jiù   (*bù)   shì   le!*
       JIU   not   right PRT
       'I'll simply come home a bit earlier in the future.' (rp: 17)

(17) a. *Chúfēi tā   qù, wǒ cái (bù/gēn didi   yīqǐ)   qù.*
       only.if (s)he go I CAI not/with younger.brother together go
       'Only if (s)he goes will I (not) go (with my younger brother).'

    b. *Tā   qù,   wǒ   jiù   bù   qù.*
       (s)he go   I   JIU   not go
       'If (s)he goes, I won't go.'

A third characteristic of modalizing uses is that no subject may intervene between the first clause and *cái* or *jiù*. This is shown in (18). The sentence in (19) just serves to demonstrate the perfect acceptability of such structures in other parametric cases.

(18) *Nǐ   děi   xiǎoxīn yī-diǎnr (*wǒ)   cái   hǎo   a!*
     you   must careful 1-CL:bit I   CAI   good PRT
     'You must be more careful!'

(19) *Nǐ   děi   xiǎoxīn yī-diǎnr, wǒ cái huì ràng nǐ   qù.*
     you   must careful 1-CL:bit I CAI will let you   go
     'Only if you are more careful will I let you go.'

One may want to claim that this behaviour is due to the fact that the first clause itself is the subject in modalizing *cái/jiù*-sentences. Such an analysis might be viable for purely syntactic reasons; but even if it were true, the obligatory-subject status of the first clause would still be a constant property of the relevant sentences.

The last property has to do with the predicates that may occur behind *cái* or *jiù* in modalizing sentences. (20) is an exhaustive list of the predicates following *cái/jiù* with which the interpretational surplus stated above may be observed.[9] The translations given render only the meanings these items usually have in non-modalizing sentences.

(20) Predicates following *cái/jiù* in modalizing sentences, and their literal meanings:

    shì   'be right'
    hǎo   'be good'
    xíng   'be okay'
    kěyǐ   'be possible/allowed'
    duì   'be correct'

If we combine the last three properties we arrive at the following maximum structure of modalizing *cái/jiù*-sentences:

$$(21) \quad \text{clause} + \begin{Bmatrix} cái \\ jiù \end{Bmatrix} + \begin{Bmatrix} shì \\ hǎo \\ xíng \\ kěyǐ \\ duì \end{Bmatrix} + \text{PRT}$$

Since nothing may intervene in those positions where the concatenation symbols are used in (21), we get a limited set of ten different modalizing sentence endings. This fact, combined with the observation that the right periphery of Mandarin sentences has always been a position for the conventionalization of modal categories in Mandarin, is probably a good explanation of the fact why modalizing uses are perceived as special.[10] I

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[9] It can hardly be a coincidence that the same five predicates are also the ones that are used in Mandarin tag-question formation. I have, however, not been able to match the individual tag-question functions of the elements with their meaning contribution in modalizing sentences. In tag questions, the different predicates relate to different kinds of speech-acts. For instance, ..., *shì bu shì?* and ..., *duì bu duì?* ask for a confirmation of the truth value of the preceding clause, while ..., *hǎo bu hǎo?* asks for agreement concerning a future action or a directive speech-act. The functions of the predicates in modalizing sentences are clearly different. This issue requires more research.

[10] Cf. Bisang (1992) and the suggestively similar, though probably not synchronically relevant, internal structure of sentence-final *éryǐ* 'only, that's all', which is made up of a conjunctional element plus a verb with the meaning 'end'.

claim that the modalizing sentential endings discussed here are actually on their way out of the class of normal *cái/jiù*-predicates, and that the degree to which this process has already advanced can be read off the (non-)clausal status being assigned to the sentential endings. To put it in the form of a disjunction: Does the structure in (21) depict a simple, or a complex sentence? By saying that the modalizing use is a sub-case of the parametric use, I have already decided in favour of the complex-sentence analysis, but I have partially done so for expository reasons. I will not make a final decision here. I will just note that a reanalysis is likely to be under way in this area.

5.2.2 The predicates following cái and jiù as markers of the modal ordering source

So far I have said very little about the actual meanings that are expressed by the sentential endings (or the embedding structures) in (21). To be able to understand the proposal, it is necessary to be familiar with the notion of ordering sources and accessibility relations as introduced in section 5.1.3. Ordering sources are those components of modal meaning that specify the system within which something is a necessity or a possibility. A moral ordering source defines worlds that are closer to or further away from the possible worlds that are completely in accord with moral standards. A legal ordering source defines a cline of worlds in which the perfect worlds are only made up of eventualities that are legal. Other ordering sources are defined by what is good for people's health, what is pleasant, and by many less general circumstantial ordering principles.

My proposal for the meaning contribution of the predicates in (20) in modalizing sentences is that they are conventionalized expressions specifying a particular ordering source. Stated differently, these words tell us with respect to what system something is a necessity or a possibility.

Consider the sentences in (15) again, repeated here as (22).

(22) a. *Nǐ   zhīdao jiù   hǎo le!*   (rp: 17)
    you   know   JIU   good PRT
    'I'm glad you know it!'/'I wish you knew it!'/
    'I wish you had known it!'

 b. *Tā   yīngdāng lái   kàn wǒ cái duì!* (cf. Alleton 1972: 138)
    (s)he should   come see I   CAI right
    '(S)he should really come and see me!'

No matter which translation we choose for (15a), each version states that the truth of *nǐ zhīdao* 'you know (it)' is, or would be in accordance with

what the speaker hopes or desires. *Hǎo* in modalizing sentences may thus be classified as an optative marker. Some sentences with *jiù/cái-hǎo*-endings have overt verbs expressing hope or desire at, or close to the left edge; cf. (23).

(23) *Xīwàng méi yǒu   shì   cái   hǎo.* (rp: 47)
    hope   not exist trouble CAI   OPTATIVE
    'I really hope there will be no trouble.'

The same sentence with *shì* 'right' would not be felicitous:

(23') *#Xīwàng méi yǒu   shì   cái   shì.*
    hope   not exist trouble CAI   right
    intended: 'I really hope there will be no trouble.'

Shì as in (23') or (24) indicates a purposive ordering source:

(24) a. *Zǒuguòqù jiù shì   le!* (rp: 02)
    walk.over JIU PURPOSIVE PRT
    'We can just walk over [to get there].'

 b. [In today's society, everybody only looks after himself. That is not okay...]
    Xūyào   tóngxuémen   tuánjié-qilai cái shì.
    it.is.necessary fellow.students unite-start.to CAI PURPOSIVE
    'The fellow students must start to unite [in order for us to achieve our goal of a less egoistic society].' (cf. hx: 77)

Walking over as in (24a) is mentioned as a possible means to the end of getting to the salient place, and the organization of students as in (24b) is not required by any law, but for the purpose of creating a better society.

(25) specifies for each of the five expressions under dicussion which kind of ordering source I assume to be encoded.

(25) Items following *cái/jiù* in modalizing sentences, and the modal ordering sources relating to them

shì	purposive:	'What is necessary or possible in view of what we aim at?'
hǎo	optative:	'What is necessary or possible in view of what we desire/hope/are happy about?'[11]
duì	deontic:	'What is necessary or possible in view of rules of social interaction?'
xíng/ kěyǐ	implementa-tional:	'What is necessary or possible in view of carrying out an action?'

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[11] Kratzer's term for this ordering source is 'bouletic'.

The purposive marker *shì* and the optative marker *hǎo* have already been discussed. *Duì* as a deontic marker has been illustrated in (15b) and (16a). Here are more examples.

(26) a. *Yīnggāi xièxie   nǐ   cái   .duì!*
       should thank   you CAI DEONTIC
       'I should thank you!'

   b. *Nǐ   juān   qián   jiù   duì   le!*
       you donate money JIU DEONTIC PRT
       'The fact/possibility of your donating money is fine [from a moral perspective]!'

(26a) would be appropriate in a situation in which the speaker suddenly feels an obligation to thank the addressee, perhaps because he has suddenly become aware of what the addressee has done for him. (26b) is fine in a context in which the person talked to is thinking about what to do with some money that she does not need. She proposes to donate it, and the speaker utters (26b) because this would be a morally good way of acting.

Xíng and *kěyǐ* are those items in modalizing sentences that I find most difficult to characterize in terms of a modal ordering source. While I am quite sure about my proposals for the other particles, the matching of *xíng* and *kěyǐ* with an implementational ordering source is likely to be subject to a more exact restatement in the future. By an implementational ordering source, I mean necessities or probabilities arising from the projected carrying out of an action. If, for instance, you want to buy something and you try to get a discount, the vendor may say (27).

(27) *Wǔshí-kuài   jiù   kěyǐ/xíng   le!*
     50-CL:MU   JIU   IMPLEMENTATIONAL   PRT
     '[Pay] 50 Kuai[, and it's yours]!'

The act of buying can be implemented by paying 50 Kuai; this seems to be the meaning contribution of the modalizing ending in (27). Admittedly, the implementational ordering source is close to what I have characterized as 'purposive' above (cf. the discussion on *shì*), but I think a distinction can be drawn between the two. The purposive ordering source always has something to do with volition and intentions, while the implementational ordering source refers to stereotypical implementational schemata. This impression is underpinned by the fact that modalizing *xíng/kěyǐ*-sentences are frequent in trading interactions (cf. the preceding and the following examples).

(28) a. *Mǎi yī-ge   èrshi-kuài qián,   mǎi   sān-ge   suàn*
        buy 1-CL   20-CL:MU money   buy   3-CL   amount
        wǔshí-kuài   qián   jiù xíng   le.
        50-CL:MU   money   JIU IMPLEMENTATIONAL   PRT
        'If you buy one it's 20 Kuai, if you buy three [the action can be carried out for/] it amounts to 50 Kuai.' (ad. rp: 22)

   b. *Nǐ   yòng xiànqián   mǎi cái kěyǐ   ya!*
       you use cash.money buy CAI IMPLEMENTATIONAL PRT
       'You must pay cash to buy it!'

A last example showing that modalizing *xíng/kěyǐ* is not restricted to trading contexts is given in (29).

(29) *Lüè   shuō-yi-shuō jiù xíng   le.*
     briefly talk.a.bit   JIU IMPLEMENTATIONAL PRT
     'Let's briefly talk it over[, and it'll be done].' (Alleton 1972: 198)

5.2.3   The function of cái *and* jiù *in the modalizing use*

There remains the task of accounting for the difference between modalizing sentences with *cái* and those with *jiù*. The case of *cái* is easy to understand. Most modalizing sentences with *cái* have overt necessity operators (cf. (15b), (16a), (18), (24b) or (26a)). In a possible-worlds account these sentences are true in all those worlds that are close to the ideal worlds in terms of the respective ordering source. In (26a), e.g., we have a deontic ordering source. I repeat this sentence in (30), and this time I indicate two different possible focus-background partitions.

(30) a. *Yīnggāi XIÈXIE   nǐ   cái   duì!*
        should thank   you CAI DEONTIC
        'I should THANK you!'

   b. *Yīnggāi xièxie   NǏ   cái   duì!*
       should thank   you CAI DEONTIC
       'I should thank YOU!'

Quite in accordance with what we know about the use of *cái*, the deontic sentences in (30) may be paraphrased as in (30').

(30') a. 'All the possible worlds that are close to the morally perfect worlds are worlds in which I thank you, and that what I do to you in these worlds is thanking has no alternative.'

    b. 'All the possible worlds that are close to the morally perfect worlds are worlds in which I thank you, and that who I thank in these worlds is you has no alternative.'

The first halves of the paraphrases are identical, and they relate to that portion of meaning that counts in terms of truth-conditions. The second halves do not go beyond these truth-conditions, because the first halves already say that for a possible world to be morally perfect it is necessary that the speaker thanks the addressee in that world, and this entails that the act of thanking may not be replaced by any other kind of behaviour and that the person thanked may not change. What the second halves do is adjust the first halves to different kinds of contexts: (30'a) would be good in a context in which the speaker suddenly notices that, instead of being a n g r y at the addressee, he should be g r a t e f u l . (30'b) is felicitous if the speaker suddenly becomes aware of the fact that the moral obligation to thank someone exists with regard to the addressee, and not with regard to somebody else.

We should remember at this point that the same contextual fine-tuning is possible if *cái duì* is not used; alternatives are related to by the foci, and not by *cái*. But if *cai* were not used, the ordering source could not be expressed. I thus claim that *cái* in modalizing sentences is used to provide a syntactic slot for the marker of the modal ordering source. As in the usual parametric uses, *cái* does not induce a specific interpretation, it only reflects it. That nothing but thanking will do in (30a), and that nothing but directing the thanks to the addressee will do in (30b), is already encoded by the use of *yīnggāi* 'should'. Paraphrases of more old modalizing *cái*-examples may be studied in (31).

(31) a. *Nǐ   děi   XIǍOXĪN YĪ-DIǍNR cái   hǎo   a!*
you   must   careful   1-CL:bit CAI   good   PRT
'All the possible worlds that are close to the perfect worlds in terms of my desires are worlds in which you are a bit more careful, and that what you do is being more careful in those worlds has no alternative.

b. [In today's society, everybody only looks after himself. That is not okay...]
Xūyào   tóngxuémen   tuánjié-qilai cái   shì.
it.is.necessary   fellow.students unite-start.to CAI   PURPOSIVE
'All the possible worlds that are close to the perfect worlds in terms of our common aims are worlds in which the fellow students start to unite, and that what the students do in those worlds is starting to unite has no alternative.'

c. *Nǐ   yòng xiànqián   mǎi cái   kěyǐ   ya!*
you   use   cash.money buy CAI IMPLEMENTATIONAL   PRT

'All the possible worlds that are close to the perfect worlds in terms of the smooth implementation of (stereotypical) actions are worlds in which you pay [for this item] with cash money, and that what you pay with to buy the item is cash money has no alternative.'

(31c) is an example in which no modal verb is used preceding *cái*. I still claim that *cái* only r e f l e c t s the fact that the sentence is meant as denoting a(n implementational) necessity. The sentence meaning would not change if the modal *yào* 'must' were used before *yòng* in (31c). Just as the English sentence *You pay with your credit card* may be used to express a necessity, (31c) without the *cái-kěyǐ*-ending can be interpreted that way. Let us contrast this with the parallel *jiù*-sentence in (32).

(32) *Nǐ   yòng xiànqián   mǎi jiù   kěyǐ   le.*
you   use   cash.money buy JIU   IMPLEMENTATIONAL PRT.
'You can pay cash to buy it.'

I offer (32') as a more complete paraphrase of the meaning of (32).

(32') 'Some possible worlds that are close to the perfect worlds in terms of the smooth implementation of (stereotypical) actions are worlds in which you pay [for this item] with cash money, and that what you pay with in those worlds to buy the item is cash money may have an alternative[, say, a traveller's cheque] that is also good for paying, but there is at least one alternative way of paying[, say, paying with credit cards] that is not used in any of the worlds close to the perfect worlds in terms of a smooth implementation.'

I thus claim that the predication preceding *jiù* in (32) is implicitly modalized by an operator of possibility, and *jiù* is used because the focus is used with the intention to signal that not all alternatives are fine, namely that at least one mode of effecting the payment is excluded. Since possibilities have less specific truth-conditions than necessities, we seldom find overt modal operators in modalizing *jiù*-sentences. They may, however, sometimes be used, and an attested example is presented in (33).

(33) *Néng bǎ   Lǎo Lǐ   tāmen-de   SHĪSHǑU dǎlāo-shàng-lái*
can   BA   Old Li   they-ATTR   corpse   salvage-up-come
jiù   hǎo   le.   (hx: 345)
JIU   OPTATIVE   PRT
'We can hopefully salvage the CORPSES of Old Li and his crowd.'/
'Some of the possible worlds that are close to the perfect worlds in terms of our desires are worlds in which we salvage the corpses of

Old Li and his crowd, and that what we salvage is their corpses in those worlds may have an alternative [we might even salvage their belongings together with their corpses], but there is at least one alternative to salvaging the corpses[, say, salvaging only their clothes] that is not true in any of the worlds close to the perfect worlds in terms of our desires.

The paraphrase given in (33) is intolerably long, so I will restate the interpretational components of this sentence as in (34).[12]

(34)   a. POSSIBLE (*We salvage the corpses of Old Li and his crowd*)
       b. Ordering source: OPTATIVE
       c. α-FACTUALITY (*We can salvage the corpses of Old Li and his crowd*)
       d. λx [*we can salvage* x *of Old Li and his crowd*], *the corpses*
       e. $\neg \forall y$, $y \neq x$ & $y \in$ ALT, *we can salvage* y *of Old Li and his crowd*

(34a) says that (33) is modalized by a marker of possibility. (34b) identifies the optative ordering source of the possibility. (34c) depicts the fact that (33) is not restricted to any specific mode of factuality (cf. the different translations in footnote 12). Strictly speaking, this does not have anything to do with the modal use, but since the translations vary heavily with the respective specifications of factuality, I have included (34c) in the list. (34d) represents a natural focus-background partition, and (34e) encodes the interpretational details restricting the focus interpretations of (33): Not all alternatives are possible.

Before concluding this section by stating the more general versions of (34) for modalizing *cái*-sentences and for modalizing *jiù*-sentences, readers may test the viability of my account with the *jiù*-examples in (35) ((35a)=(16b)).

(35)   a. [Yulin's parents are worried about her coming home late in the evening. Yulin proposes:]
          Yǐhòu   na, wǒ zǎo yī-diǎn huí-lái   jiù shì.
          afterwards PRT I   early 1-CL:bit return-come JIU PURPOSIVE
          '[In order for you not to be concerned anymore,] I can come home a bit earlier in the future.'
       b. *Nǐ   juān   qián   jiù   duì   le!*
          you donate money JIU DEONTIC PRT

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[12] Note, however, that the first free translation is too restrictive in terms of factuality. (33) may just as well be read as *I'm glad we could salvage the corpses...* or as *I wish we could salvage the corpses....*

'The fact/possibility of your donating money is fine [from a moral perspective]!'[13]

The general versions of the different components that are relevant to the interpretation of modalizing *cái*-sentences and modalizing *jiù*-sentences are given in (36) and (37). These two schemata conclude the present section.

(36)   Schema of modalizing *cái*-sentences:
       '(MOD$_{NEC}$+) p + *cái* + MARKER OF THE ORDERING SOURCE'
       a. MOD$_{NEC}$ p
       b. OPTATIVE/DEONTIC/PURPOSIVE/IMPLEMENTATIONAL ordering source of MOD
       c. α-FACTUALITY p
       d. λx [Background of MOD$_{NEC}$ p], Focus of MOD$_{NEC}$ p
       e. $\neg \exists y$, $y \neq$ Focus value & $y \in$ ALT, Background(y)

(37)   Schema of modalizing *jiù*-sentences:
       '(MOD$_{POSS}$+) p + *jiù* + MARKER OF THE ORDERING SOURCE'
       a. MOD$_{POSS}$ p
       b. OPTATIVE/DEONTIC/PURPOSIVE/IMPLEMENTATIONAL ordering source of MOD
       c. α-FACTUALITY p
       d. λx [Background of MOD$_{POSS}$ p], Focus of MOD$_{POSS}$ p
       e. $\neg \forall y$, $y \neq$ Focus & $y \in$ ALT, Background(y)

5.3   THREE PEOPLE AND A PIANO

In this section I want to investigate the Mandarin version of a problem in focus semantics that has been puzzling researchers for quite a while (cf., for instance, Jacobs 1983: 224–31 or König 1991a: 51, 101ff). The treatment of this problem does not just give us an opportunity to see how parametric *cái* and *jiù* are used in Mandarin to tell apart readings of sentences that are ambiguous in English. This section will also give us a lesson concerning translational equivalence. The result will be that translational equivalence is not to be confounded with identity of logical form. This finding may not be entirely new, but the empirical part of this section illustrates it in an impressive way. Before turning to the Mandarin data, the English case is discussed.

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[13] Note that, even if this sentence is uttered in a context in which the addressee has actually donated money, it is still possible to say that it is implicitly modalized. All actual facts are trivially possible facts.

One version of the problem is about three people and a piano:

(38)   *Only THREE people can move the piano.*

(38) has several readings. For the first reading, imagine you want to move your piano to a different room, and only one friend is there to help you. Since pianos are heavy your friend may say: 'Sorry, I think we can't do it alone. Only three people can move the piano.' Let us call this the heavy-piano reading. In this situation the speaker excludes the possibility that the number of people present, namely two, is enough to move the piano. Four or five people would, under most circumstances, also be a possibility, but these alternatives are probably not relevant in this setting.

On the second reading, a professional piano transporter deals with a client who enquires about the number of people needed to move a piano. The client thinks that one needs at least five people, but the professional reassures him: 'Only three people can move the piano'. I will call this the light-piano reading. Under the circumstances of the light-piano reading, it is excluded that more people are needed, and it is implicated, but not entailed or presupposed, that two people would not be enough.

Everything is fine with the heavy-piano reading, and our descriptive generalization concerning *cái*-foci from ch. 4, which should also be true of *only*-foci in general, covers what is entailed to be wrong ('Two people can move the piano', 'One person can move the piano'). The setting with the light-piano reading is trickier. Above we said that, in this context, (38) entails 'No more than three people are needed to move the piano'. (38) does entail this, but this entailment cannot be due to the use of *only*, because (38) without *only* likewise entails 'No more than three people are needed to move the piano'; cf. (39).

(39)   *Three people can move the piano.*

To see more clearly what is really excluded by the use of *only* in the light-piano reading of (38), consider the following paraphrase.

(38')   *If there are only three people present, they can move the piano.*

Inasmuch as this paraphrase reflects the relevant meaning portions of the light-piano reading, it shows two things: (i) *only* in the light-piano reading does not have sentential scope because in the paraphrase (38') its scope is clearly confined to the *if*-clause, and (ii) since entailments are lost in protases, the *only*-entailment which the protasis of (38') would have as an independent sentence ('There are only three people' entails 'There are no more than three people') does not hold for the whole conditional. Although the *only*-entailment is not truth-conditionally active with

respect to the whole sentence, some non-trivial alternative proposition ('There are four people', 'There are five people') must be contextually given. In our setting the client's wrong assumption introduces this proposition into the common ground, and although the calculation of alternatives takes place on a "sub-truth-conditional" level, the evaluational implicature going along with this calculation is surely felt to be present in the light-piano reading of (38): Three people are less than expected. The fact that the entailment, but not the evaluational component, is hidden in the light-piano reading, is taken by Jacobs as an argument in favour of his claim that both the quantificational component of meaning, and the evaluational component form part of the lexical meaning of *only*-words, and that either may be lost in special contexts. I have taken a different position here which derives the "neutralization" of the quantificational entailment from its truth-conditional inactivity, while the evaluational implicature is still triggered by the context. What I cannot discuss here is what syntactic consequences arise from the postulated propositional interpretation of the subject of (38) in the light-piano reading.

(38) has at least one more reading. This reading surfaces when we think of a delicate piano which must be handled with greatest care. Only three people have received the right training, and only these people can move the piano. Let us call this the delicate-piano reading. In this reading the subject is interpreted existentially ('There are only three people who can do the job, namely Bob, Joe and Ben'), and *only* has wide scope.

In Chinese each reading must be expressed in a univocal way.

(40)   a.   The heavy-piano setting:

      SĀN-ge   *rén*   *cái*   *bāndedòng* *zhè-jiā*   *gāngqín.*
      3-CL   person   CAI   can.move   this-CL   piano
      'Only (as many as) THREE people can move this piano.'

    b.   The light-piano setting:

      Zhǐ-yào   *SĀN-ge*   *rén*
      only-need   3-CL   people
      jiù/*cái bāndedòng   *zhè-jiā* *gāngqín*   *le.*
      JIU/CAI can.move   this-CL   piano   PRT
      'Only (as few as) THREE people are needed to be able to move this piano.'

    c.   The delicate-piano setting:

      Zhǐ   *yǒu*   *SĀN-ge*   *rén*
      only   exist   3-CL   people

> *(*cái)*   *kěyǐ*   *bāndòng*   *zhè-jiā*   *gāngqín.*
> CAI   can   move   this-CL   piano.
> '(There are) Only THREE people (who) can move this piano.'

Each of the Chinese sentences in (40) is limited to one setting, and the interesting question from the point of view of our investigation is whether we can account for the occurrences of parametric *cái* and *jiù* in each case. At the same time, the recurrent topic of this chapter, alleged dilemmas of semantic scope and syntax, will be relevant to our discussion.

Consider (40a) first. The number word is in focus, and *cái* reflects the fact that the focus is intended as a focus excluding all non-trivial alternatives. The trivial alternatives are sentences with more than three people lifting the piano: If three people can do the job, four or five people would do no harm, either. Thus, only sentences with numbers lower than three are relevant, and all of them are excluded. No problems arise with this sentence, except for the fact that I have not been able to find a focus-marking device that could be used in front of the focus to ensure the correct reading other than contextual information (recall that *cai* as a parametric word only r e f l e c t s a type of focus quantification).

Let us skip (40b) for the moment and move straight on to the delicate-piano setting in (40c). In this sentence *cái* is ungrammatical even though all the excluded alternatives are non-trivial alternatives. The reason for the deviance of (40c) with *cái* must thus lie elsewhere. I assume it lies in the syntax of the sentence. As reflected by the parenthesized translation option, the Chinese sentence is really an existential sentence in which the predication starting with *kěyǐ* 'can' is functionally similar to a relative clause, much as in the English translation which makes use of a relative clause, i.e. it restricts the interpretation of *sān-ge rén* 'three people' such that (in our context) only Bob, Joe and Ben are possible values of the variable in the subject argument (cf. Li 1996 for the discussion of different kinds of existential sentences in Mandarin; according to her classification (40c) is an Ind-type *yǒu*-structure). If this is taken for granted, *yǒu* 'exist' is the matrix predicate of a complex sentence, and *kěyǐ* 'can' is embedded.[14] We know from all other examples in this study that paramet-

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[14] It is tempting to identify the sequence *zhǐ yǒu* 'only exist' in (40b) with the bisyllabic *only*-word *zhǐyǒu*, which is used before non-verbal categories and as a subordinator in *only-if*-clauses. This identification would be false. The sequence *zhǐ yǒu* in (40c) is made up of two words; both words enter the semantic composition of the sentence separately. Formal proof of this comes from the possibility to drop *zhǐ* in (40c): The resulting sentence would, as predicted, simply mean '(There are) Three people (who)

ric words attach to the syntactically superordinate predicates, and therefore, *cái* may not be used before *kěyǐ* 'can' in (40c).

The Mandarin sentence for the light-piano setting ((40c), repeated here as (41)) is clearly trickiest.

(41)   *Zhǐ-yào*   *SĀN-ge*   *rén*
       only-need   3-CL   people
       jiù/*cái   *bāndedòng*   *zhè-jiā*   *gāngqín*   *le.*
       JIU/CAI   can.move   this-CL   piano   PRT
       'Only (as few as) THREE people are needed to be able to move this piano.'

But (41) constitutes a problem only as long as we disregard the results of section 5.1.3. Recall that, in that section, a solution to the *zhǐyào*-problem has been proposed. At a first glance, it looks like semantic scope and syntactic facts are in conflict in (41): The modal in *zhǐyào* has matrix scope, but the clause in which it occurs is subordinate. The solution I have proposed for this problem may be summarized as follows: Sentences like (41) are neither conditional sentences, nor purposive constructions. They are really complex sentences straightforwardly instantiating the tripartite quantificational structure of modalized propositions. The modal is the quantifier, the subordinate clause without the conjunction/focus marker and the modal constitutes the nuclear scope, and the main clause instantiates the circumstantial modal base, i.e. the accessibility relation. See section 5.1.3 for the details. If, furthermore, we incorporate the insight arrived at on p. 258, we get the following paraphrase for (41): 'All the possible worlds which are such that this piano can be moved are such that only three people are needed'.

Let us now turn to the matter of why *jiù* is used in (41). First let us think about what we would predict the meaning of (40b) to be if *zhǐyào* were not used. This case is illustrated in (41').

(41')   *SĀN-ge*   *rén*   *jiù*   *bāndedòng*   *zhè-jiā*   *gāngqín*   *le.*
       3-CL   people   JIU   can.move   this-CL   piano   PRT
       '(As few as) THREE people can move this piano.'

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can move this piano'. In cases in which *zhǐyǒu* is used as a focus marker, *zhǐ* may not be dropped without influencing grammaticality; cf. (i) and (ii).

(i)   *Tā*   **(zhǐ)yǒu*   *ZHÈ-zhǒng*   *shū*   *cái*   *mǎi-guo.*
    (s)he   only   this-CL:kind   book   CAI   buy-ASP
    '(S)he's only bought THIS kind of book before.'

(ii)   **(Zhǐ)yǒu*   *TĀ*   *lái,*   *wǒ*   *cái*   *qù.*
     only.if   (s)he   come   I   CAI   go
     'Only if (s)HE comes will I go.'

This sentence has at least the following components of meaning:

(i) It asserts that three people can move the piano;

(ii) it implies that four or five people would also be sufficient;

(iii) the fact that *jiù* is used reflects the fact that some relevant alternative sentence is presupposed not to be true.

The last point is what matters here. If no relevant alternative sentence with numbers lower than 'three' is true, the focus interpretation stated in (iii) is still true. This is what makes (41') apt to be used in the light-piano setting. But with a different context it is easy to see that (41') is less restricted than (41). Think of a context again in which you want to hire professionals to move your piano to another room. The company allows you to book either a single person, or three persons, but for some reason booking two people is impossible. You may ask: 'How many people will be enough?', and the professional uses (41') to answer your question. His answer leaves open the possibility that actually two people would already be enough to move your piano, but since a single person is not sufficient, and two people cannot be booked, he only gives you the option involving three people. Using (41') is not a lie, because *jiù* leaves it open whether two people would not be an option, too. I claim that (41) would amount to a deception if uttered in our context. Let us see how this comes about. First, consider what the necessity operator of *zhǐyào* adds to the meaning of the sentence. *Three people are needed*, that is the paraphrase of the assertion of (41) including the necessity operator: No less than three people will do. This does go together with the focus interpretation reflected by *jiù*, because the extreme case of negated universal quantification over the domain of alternatives is negated existential quantification. It does not fully go together with our new context, though: The necessity operator at least implicates that three people moving the piano are the borderline case. To say that one needs three people strongly disfavours the possibility that one would actually only need two. Therefore, (41) amounts to a deception, if not a lie, in our context. The *only*-component of *zhǐyào* adds the (redundant) information that no more than three people are needed, and since this is redundant, the evaluational implicature, namely that three people are not much, has the field to itself.

The discussion of (40b)/(41) has shown the following. First, the semantics proposed for *jiù*-sentences can handle such complicated cases. Second, if we compare the accout given for (40b) and for its English counterpart at the beginning of this section, we must state that the match between the two sentences is highly indirect. I have proposed above that (42a) in its light-piano reading is interpreted like (42b).

(42) a. *Only THREE people can move the piano.*

    b. *If there are only THREE people they can move the piano.*

As we know, the English paraphrase of the Mandarin version is more like (43).

(43) *All the possible worlds which are such that this piano can be moved are such that only THREE people are needed.*

Paraphrased in terms of the semantics for conditionals that I have assumed throughout this study (cf. sections 4.1.5 and 4.2.3), (42b) comes out as (42'b).

(42') b. *The English light-piano setting:*

    [All]$_{\text{QUANTIFIER}}$ the situations which are [such that there are only three people]$_{\text{RS.}}$ are [such that the piano can be moved]$_{\text{N.S.}}$

    (i.e. '$\forall\ldots[only\ldots]_{\text{RESTRICTOR}}$, [POSS$\ldots$]$_{\text{NUCLEAR SCOPE}}$')

A paraphrase of (43) to cover the Mandarin sentence which is more explicit in terms of the constituent parts of the quantificational structure can be found in (43'). (Note, for the last time, the quantificational peculiarity described on p. 258, which results from the Mandarin facts of modal constituency.)

(43') *The Mandarin light-piano setting:*

    [All]$_{\text{QUANTIFIER}}$ the possible worlds which are [such that this piano can be moved]$_{\text{RESTRICTOR}}$ are [such that only THREE people are needed]$_{\text{NUCLEAR SCOPE}}$.

    (i.e. '$\forall\ldots$[POSS$\ldots$]$_{\text{RESTRICTOR}}$ [$only\ldots$NEC$\ldots$]$_{\text{NUCLEAR SCOPE}}$')

I will not try to show exactly how the translational equivalence can be derived. My purpose here has been to illustrate that translational equivalence does not mean that the source sentence and the target sentence have the same logical form.

The present section as a whole has demonstrated that ambiguities of the piano-moving kind, which consistently arise in English and other European languages, do not exist in Mandarin, because the system of focus-background agreement encoded by parametric words, and certain structural peculiarities of Mandarin existential sentences or *zhǐyào*-sentences conspire to yield univocal sentences.

5.4 TWO PARAMETRIC WORDS IN A SINGLE CLAUSE

All of the examples discussed so far have been sentences with configurations triggering the use of a single parametric word. In this section I want to widen the perspective. I will discuss on what conditions the use of two parametric words is in principle possible in a single clause, I will test all combinatorial possibilities, and I will draw some preliminary conclusions.

Recall from ch. 3 that parametric words are situated at the left edge of the verbal complex, probably immediately above modal or aspectual functional phrases. Extending proposals that have been made for single parametric words, we may say that the more recent syntactic tradition analyzes parametric *cái*, *jiù*, *dōu* and *yě* as functional heads (cf. the discussions in sections 3.1.2.A and 3.4.1, and the references cited there). It should therefore come as a surprise if a single verbal complex included two occurrences of functional categories that one would assume to compete for a single syntactic position.[15] Precisely this is, contrary to expectation, possible in Mandarin, even if, admittedly, such structures are disfavoured. An example of such a configuration is given in (44).

(44) *Zhǐyǒu TIĀNQÌ HǍO, wǒmen cái lián BĪNGQÍLÍN*
      only.if weather good we   CAI even ice-cream
      yě huì chī.
      YE will eat
      'Only if THE WEATHER IS FINE will we even eat ICE-CREAM.'

In this sentence the focus in the *only-if*-clause triggers the use of *cái* at the left edge of the verbal complex of the matrix clause. But instead of *cái* being followed by some verbal category, another parametric cycle is inserted, namely an *even*-focus (*bīngqílín* 'ice-cream'), which must be followed by parametric *yě* to the left of the first verbal element of the matrix clause. The grammaticality of (44) thus shows that *cái* and *yě* cannot be assumed to compete for a single syntactic position (unless we assume some recursive pattern).

On the other hand, such occurrences of two parametric words in a single clause are heavily restricted. I have been able to identify the following constraining factors:

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[15] Gasde (1998) assumes two focus phrases, one of them within IP, the other one outside IP. These two focus phrases cannot be identified with the focus structures in the following examples because Gasde's focus phrases are never adjacent; the parametric words in the following examples can, however, only be argued to be in immediately adjacent phrases.

(i) A focus and its parametric word must not be separated from one another by a nested focus, or a nested agreement marker, i.e. the focus-agreement configurations do not interlace.

(ii) No quantificational expression may intervene anywhere in the structure between the first focus and the second parametric word.

(45a) states the general structure of licit double-focus agreement structures, the restrictions are represented in (45b) and (45c) (*FOC* represents the focal constituents, *PAR* represents the parametric particles).[16]

(45) a. $[\text{FOC}_{\text{TYPE1}}\ldots[\text{PAR}_{\text{TYPE1}}\ [\text{FOC}_{\text{TYPE2}}\ [\text{PAR}_{\text{TYPE2}}\ [\text{M/AspP}]]]]]$

      b. $*[\text{FOC}_{\text{TYPE1}}\ldots[\text{FOC}_{\text{TYPE2}}\ [\text{PAR}_{\text{TYPE1/2}}\ [\text{PAR}_{\text{TYPE2/1}}\ [\text{M/AspP}]]]]]$

      c. $[\text{FOC}_{\text{TYPE1}}\ldots(*\text{Q})\ldots[\text{PAR}_{\text{TYPE1}}[\ldots(*\text{Q})\ldots[\text{FOC}_{\text{TYPE2}}[\ldots(*\text{Q})\ldots$
         $[\text{PAR}_{\text{TYPE2}}\ [\text{M/AspP}]]]]]]]$

(46) is the bad version of (44) illustrating (45b). (47) instantiates (45c).

(46) **Zhǐyǒu TIĀNQÌ HǍO, wǒmen lián BĪNGQÍLÍN*
      only.if weather good we   even ice-cream
      (cái yě/yě cái) huì chī.
      CAI YE/YE CAI will eat
      intended: 'Only if THE WEATHER IS FINE will we even eat ICE-CREAM.'

(47) *Zhǐyǒu TIĀNQÌ HǍO, (*píngcháng) wǒmen (*píngcháng)*
      only.if weather good usually   we   usually
      cái (*píngcháng) lián BĪNGQÍLÍN (*píngcháng) yě huì chī.
      CAI usually   even ice-cream   usually   YE will eat
      'Only if THE WEATHER IS FINE will we (usually) even eat ICE-CREAM.'

The cases of (45b) and (45c) can be subsumed under a single heading: Since focus-background partitionings are structures involving quantification, (45b) and (45c) are just special cases of the more general restriction in (48).

(48) $[\text{FOC}_{\text{TYPEx}}\ldots[(*\text{Q})\ [\text{PAR}_{\text{TYPEx}}\ [\text{M/AspP}]]]]$

(48) says that no quantificational expression may intervene between the focus which triggers the use of a parametric word, and the parametric word itself. This quantificational expression may either be a quantifier

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[16] As pointed out in section 3.1.2.B already, these factors are highly reminiscent of Aoun & Li's (1993) Minimal Binding Requirement. Although focus quantification is a kind of quantification, I have decided not to analyze the relationship between foci and parametric words as a quantifier-variable structure. Perhaps this is inadequate, or the observed similarity can be accounted for on a more general level of analysis.

like *píngcháng* 'usually' in (47), or another focus as in (46). (48) is thus just a variant of the generalization stated in section 3.1.2 that, within the *cái*-clause, no scope-bearing element may intervene between *cái* and its interacting focus. The scope of (48) is wider, though, because it is not restricted to *cái*(-foci).

In (49) through (52) I present examples which illustrate all the logically possible combinations of complex focusing structures as in (44) if we make use of all combinatorial possibilities among foci interacting with parametric *cái*, *jiù*, *dōu* and *yě*. None of these sentences violate any of the restrictions dealt with above. Some of them may be difficult to con-textualize, or even slightly deviant, but all of them are interpretable.

(49) a. *cái – cái*

Zhĭyŏu	*tiānqì*	*BÙ*	*hăo,*	*wŏ*	*cái*	*zhĭyŏu*
only.if	weather	not	good	I	CAI	only

NÈI-ge	*dìfāng*	*cái*	*xiăng*	*qù.*
that-CL	place	CAI	want	go

'Only if the weather is NOT good do I only want to go to THAT place.'

b. *cái – jiù*

Zhĭyŏu	*tiānqì*	*HĂO,*	*wŏmen*	*cái*	*zài ZHÈLĬ*
only.if	weather	good	we	CAI	at here

jiù	*néng*	*wánr.*
JIU	can	play

'Only if the weather is GOOD can we play HERE.'

c. *cái – dōu*

Zhĭyŏu	*tiānqì*	*HĂO,*	*wŏmen*	*cái*	*lián*	*BĪNGQÍLÍN*
only.if	weather	good	we	CAI	even	ice-cream

dōu	*huì*	*chī.*
DOU	will	eat

'Only if the weather is GOOD will we even eat ICE-CREAM.'

d. *cái – yě*

Zhĭyŏu	*tiānqì*	*HĂO,*	*wŏmen*	*cái*	*lián*	*BĪNGQÍLÍN*
only.if	weather	good	we	CAI	even	ice-cream

yě	*huì*	*chī.*
YE	will	eat

'Only if the weather is GOOD will we even eat ICE-CREAM.'

(50) a. *jiù – cái*

Rúguŏ	*tiānqì*	*BÙ*	*hăo,*	*wŏmen*	*jiù*	*zhĭyŏu*
if	weather	not	good	we	JIU	only

zài	*ZHÈLĬ*	*cái*	*néng*	*wánr.*
at	here	CAI	can	play

'If the weather is NOT good, we can only play HERE.'

b. *jiù – jiù*

Rúguŏ	*tiānqì*	*HĂO,*	*wŏmen*	*jiù*	*zài ZHÈLĬ*
if	weather	good	we	JIU	at here

jiù	*néng*	*wánr.*
JIU	can	play

'If the weather is GOOD, we can play HERE.'

c. *jiù – dōu*

Rúguŏ tiānqì	*HĂO,*	*wŏmen*	*jiù lián*	*BĪNGQÍLÍN dōu chī.*
if	weather good	we	JIU even	ice-cream DOU eat

'If the weather is GOOD, we will even eat ICE-CREAM.'

d. *jiù – yě*

Rúguŏ tiānqì	*HĂO,*	*wŏmen*	*jiù lián*	*BĪNGQÍLÍN*	*yě chī.*
if	weather good	we	JIU even	ice-cream	YE eat

'If the weather is GOOD, we will even eat ICE-CREAM.'

(51) a. *dōu – cái*

Jíshĭ	*tiānqì*	*LĔNG,*	*wŏ dōu*	*zhĭyŏu*	*BĪNGQÍLÍN*
even.if	weather	cold	I DOU	only	ice-cream

cái	*xiăng*	*chī.*
CAI	want	eat

'Even if the weather is COLD, I only like to eat ICE-CREAM.'

b. *dōu – jiù*

Jíshĭ	*tiānqì*	*HĂO,*	*wŏmen*	*dōu*	*zài*	*ZHÈLĬ*
even.if	weather	good	we	DOU	at	here

jiù	*néng*	*wánr.*
JIU	can	play

'Even if the weather is GOOD, we can play HERE.'

c. *dōu – dōu*

Jíshĭ	*wŏmen*	*YŎU QIÁN,*	*wŏmen*	*dōu*	*lián*	*MĬFÀN*
even.if	we	have money	we	DOU	even	rice

dōu	*bù*	*chī.*
DOU	not	eat

'Even if we HAVE MONEY we don't even eat RICE.'

d. *dōu – yě*

Jíshĭ	*wŏmen*	*YŎU QIÁN,*	*wŏmen*	*dōu*	*lián*	*MĬFÀN*
even.if	we	have money	we	DOU	even	rice

yě	*bù*	*chī.*
YE	not	eat

'Even if we HAVE MONEY we don't even eat RICE.'

(52) a. *yě – cái*

     Jiùshì   tiānqì   LĚNG, wǒ yě   zhǐyǒu   BĪNGQÍLÍN
     even.if   weather   cold   I   YE   only   ice-cream
     cái   xiǎng   chī.
     CAI   want   eat
     'Even if the weather is COLD, I only like to eat ICE-CREAM.'

  b. *yě – jiù*

     Jiùshì   tiānqì   HǍO, wǒmen   yě   zài   ZHÈLǏ
     even.if   weather   good   we   YE   at   here
     jiù   néng   wánr.
     JIU   can   play
     'Even if the weather is GOOD, we can play HERE.'

  c. *yě – dōu*

     Jiùshì   wǒmen   MÉI   yǒu   qián,   wǒmen   yě
     even.if   we   not   have   money   we   YE
     lián   QĪNGWĀ-RÒU   dōu   chī.
     even   frog-meat   DOU   eat
     'Even if we DON'T have money we eat even FROG MEAT.'

  d. *yě – yě*

     Jiùshì   wǒmen   MÉI   yǒu   qián,   wǒmen   yě
     even.if   we   not   have   money   we   YE
     lián   QĪNGWĀ-RÒU   yě   chī.
     even   frog-meat   YE   eat
     'Even if we DON'T have money we eat even FROG MEAT.'

With these examples in mind, recall the claim put forward in this study that parametric *cái*, *jiù*, *dōu* and *yě* are agreement markers: Focus-quantificational types agree with their backgrounds. Now the question arises why two parametric words are allowed per clause while, for instance, two different aspect markers are never found in a single clause. If structures of foci and parametric words are agreement structures, and if they operate on a predicational level just like aspect markers, it is not at all clear how a single predicate can agree twice for different values of one dimension. I think the answer to this question must be that the parametric words are only parasitic on the verbal domain: For the purpose of focus-background agreement, the verbal domain is conventionally taken as the carrier category of the focus-agreement marker. Recall from section 3.3.1 that it is even possible to have verbs in focus in *dōu/yě*-sentences, and that even in those cases a dummy instance of the verb hosts the negation marker and the parametric word; cf. (53).

(53) *Tā   lián   LÁI   dōu   méi   lái.*
    (s)he   even   come   DOU   not.have   come
    '(S)he hasn't even COME.'

Focus-background agreement is thus not a "true" verbal category, with a "true" verbal category taken as one which may only have one value per clause or per eventuality. True verbal categories reflect properties of eventualities or situations; the system of reflecting focus-quantificational types within the background, which is the topic of this study, relates to the (in)compatibility of the truth of the asserted sentence with the truth of other, contextually relevant sentences. This is something different. For this different function, there is no inherent restriction of the number of possible focus-background partitions to one per sentence or clause.

Analyses which take parametric *cái*, *jiù*, *dōu* and *yě* to be heads of functional phrases are faced with the following syntactic challenges. First, a single functional phrase will not be enough to accomodate the above data: At least two stacked phrases must be allowed in a single clause.[17] This may not be much of a problem, but the analysis must additionally allow for any relative order among the functional phrases, because we have seen that all combinatorial possibilities yield grammatical and interpretable results. A second possibility would be to say that sentences as discussed in this section may be interpretable, but that they constitute cases in which the syntactic possibilities have been stretched to the extreme. According this view, one could argue that these data pose no particular challenge.

In this section I have shown that two occurrences of parametric words per clause are possible, provided the two structures, each consisting of a focus and a corresponding parametric word, do not interlace, and provided no other quantificational expressions intervene. While common verbal categories preclude such configurations (only a single tense marker may, for instance, be used per clause), structures of this kind are fine in our domain. I have argued that the parametric agreement markers are just parasitic on the verbal complex, because predicates are conventionally identified with backgrounds as the locus of focus-background agreement. Since clauses may have several foci, but only, for instance, a single tense specification, the occurrence of two parametric words per clause is not a mystery.

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[17] See footnote 15.

6   CONCLUSIONS AND OUTLOOK

6.1   MAIN CLAIMS AND RESULTS

The aim of this study has been to discuss the grammaticalized system of focus quantification in Mandarin Chinese. This system involves highly regular morphosyntactic agreement patterns between types of foci or contrastive topics preceding the verbal complex, and obligatory parametric particles at the left edge of the verbal complex.

In a first step (ch. 2), I have singled out the parametric uses of *cái*, *jiù*, *dōu* and *yě* as linguistic signs in their own right from among other uses of the same signifiants (and the same characters in writing).

Ch. 3 has been devoted to determining the conditions which trigger and constrain the use of parametric words, as long as the nature of the interacting foci or contrastive topics is kept constant and appropriate. The facts discussed in that chapter have led to the hypothesis that parametric words are agreement markers of focus-background structures. A background is, in certain conditions, obligatorily marked for the type of focus (or ｛contrastive topic) preceding it. The locus of background agreement in （ Mandarin is the verbal complex, i.e. predicates are conventionally associated with backgrounds without this really being the case in each and every case.

In ch. 4 I have presented my account of the focus quantificational system behind the parametric words. The system of focus quantificational types is designed according to the logic of the traditional Aristotelian quantificational square: An existential or universal operator, combined with inner and/or outer negation, if applied to the domain of alternative sentences provided by the focus interpretation of a sentence, yields four basic types:

(i)   negated existential quantification over the domain of alternatives (*cái*);

(ii)   negated universal quantification over the domain of alternatives (*jiù*);

(iii)   universal quantification over the domain of alternatives (*dōu*);

(iv)   existential quantification over the domain of alternatives (*yě*).

The core system is enriched by a more specific restriction concerning *dōu*-foci. This focus type has the further property of restricting the members of the domain of alternative sentences to the same factuality status

as the asserted proposition. For factual sentences, counterfactual alternatives may thus only be considered in *cái*-sentences, *jiù*-sentences, and in *yě*-sentences. Apart from the four basic parametric words, two more members of the same paradigm, *hái* and *zài*, have briefly been discussed, and the narrower restrictions that they put on their contexts have tentatively been stated. The discussions dealing with each parametric word have mainly concentrated on issues that have repeatedly been discussed in the literature. I have always aimed at making it clear where the link is between these particular discussions, and the general claim of the present study.

It has been the goal of ch. 5 to collect some problematic or special data that require further scrutiny, or more detailed investigations in the future. First, many examples display a recurrent pattern of seeming syntax-semantics mismatches: A subordinate clause within the scope of the overall focus-background structure contains an operator with scope above the focus-background structure. This kind of mismatch arises if one aims at identifying the subordination structure with the structure of a conditional sentence. The problem vanishes if one takes the subordinate clause minus the modal to be the nuclear scope of a tripartite modal quantificational structure, while the superordinate clause constitutes the restricting circumstantial modal base, or accessibility relation. The resulting structure directly mirrors Kratzer's (1981, 1991a) notional constituency of modalized propositions, the only slightly peculiar fact being that the restrictor of the quantificational structure is syntactically superordinate. Moreover, ch. 5 contains an analysis of certain post-parametric predicates as conventionalized markers of modal ordering sources independent of the modal force. To the best of my knowledge, such a system has never been proposed in the theoretical literature, but its existence is implicitly predicted by current theories of modality. In the last part of ch. 5 sentences with two parametric words have been under discussion. The fact that all combinatorial possibilities of two parametric words can yield interpretable sentences poses some challenges for an explicit syntactic theory covering our empirical domain.

I have not paid any closer attention to the interaction of the system of focus quantification with other verbal categories such as aspect marking. This is definitely a task for future research, even though previous research in this area has already hinted at some connections.

Although I may be running the risk of repeating myself, I would like to emphasize once more the central status that the phenomenon treated in this study has within Mandarin grammar. Mandarin is a language with a

rich syntactic apparatus, and scarce morphological devices. A phenomenon that involves the grammaticalized triggering of an agreement marker in the presence of another overt category is quite remarkable in such a language. The conclusion to be drawn from this is that the system of Mandarin focus quantification is part of the core of Mandarin grammar. In terms of centrality, few categories of Mandarin grammar with a segmental reflex can compete with this phenomenon. In the verbal/sentential domain aspect marking, V-*not*-V question formation, and the system of sentence final particles probably can; in the grammar of Mandarin nominals I can only think of the classifier system as matching grammatical relevance with segmental representation in a comparable way.

6.2 THE WIDER CONTEXT

From the point of view of cross-linguistic research and theoretical linguistics the following points should be stressed.

6.2.1 The exotic status of the quantificational type relating to jiù

The first general question arising from the results of this study has to do with the focus-quantificational type relating to *jiù* (see section 4.2): Negated universal quantification over the domain of alternatives has, as far as I know, never been proposed as a conventionalized notion in any system of focus quantification. If my analysis of the Mandarin data is correct, it is highly unlikely that no other language should have conventionalized the same focus-quantificational type. Perhaps this seemingly exotic quantificational type is not all that rare once we seriously start watching out for it. Even if segmental focus markers of the non-universal quantificational kind turn out to be extremely rare, or even absent in most languages, it need not follow that this type of focus-quantification is not expressed in a conventionalized way. Just think of the function C(ontrastive)-topics fulfill (see section 4.2.4 for details): *If you buy me a* [*DIAMOND RING*]$_{C-topic}$ *I will MARRY YOU.* This conditional, with the indicated information structure, may correctly be paraphrased as: 'A situation in which you buy me a diamond ring is also a situation in which I will marry you, and there is at least one alternative situation in which you buy me something else, and I will not marry you in that situation'. This is precisely the kind of information structure triggering the use of *jiù*, and it was not a coincidence that C-topics were discussed in the sections dealing with the function of *jiù*. If *jiù* may, among other things, reflect information-structural facts that are often expressed by prosodic means in other

languages, it is not such a big surprise anymore that many languages lack words that are similar to *jiù* in function.

6.2.2 Two topological focus-background systems

A second general thought concerns the overall topological system of focus positions in Mandarin: If we do not just look at the configurations triggering the use of parametric *cái*, *jiù*, *dōu* and *yě*, but also look at the system of "common" focus particles in adverbial position such as *zhǐ* 'only' or *shènzhì* 'even', we are able to make some interesting observations. Sentences with parametric particles will almost invariably have their foci to the left of the main predicate (the only exceptions being the cases of *cái*-foci to the right of *cái*; see section 3.1.2.A). Sentences with adverbial focus particles like *zhǐ* 'only' will always have their foci to their right. Some examples from the very first section of this study are repeated in (1) and (2) to remind us of this topological diversity.

(1) a. *Lǎo Wáng   zhǐ   hē   CHÁ.*
       Old Wang   only   drink tea
       'Old Wang only drinks TEA.'
    b. *Lǎo Wáng   zhǐyǒu   CHÁ   *(cái)   hē.*
       Old Wang   only   tea   CAI   drink
       'Old Wang drinks only TEA.'
(2) a. *Lǎo Wáng   shènzhì   hē   CHÁ.*
       Old Wang   even   drink tea
       'Old Wang even drinks TEA.'
    b. *Lǎo Wáng   lián   CHÁ   *(yě/dōu)   hē.*
       Old Wang   even   tea   YE/DOU   drink
       'Old Wang drinks even TEA.'

The a-sentences have focus particles in adverbial position, while the b-sentences have preposed objects in focus, and parametric words must be used. There is a difference between the range of readings each type of sentence may have: While it is in principle possible to have bigger focus portions that include the whole VP in the a-sentences, the foci must be narrow in the b-sentences.

We thus get two different focus(-background) topologies in Mandarin, depending on whether the a-type system, or the b-type system is used. This is schematically represented in (3).[1]

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[1] The focus in the b-schema must, of course, be restricted to a reading triggering the use of a parametric word. It is not the case that just any preverbal focus triggers the use of a parametric word.

(3) a. $\text{background} + zh\breve{i} \text{ / } sh\grave{e}nzh\grave{i} \text{ / } y\breve{e}... + \binom{\text{back-}}{\text{ground}} \text{FOCUS} \binom{\text{back-}}{\text{ground}}$

    b. $\binom{\text{back-}}{\text{ground}} \text{FOCUS} \binom{\text{back-}}{\text{ground}} + c\acute{a}i \text{ / } ji\grave{u} \text{ / } d\bar{o}u \text{ / } y\breve{e} + \text{background}$

Recall that constraints on movement and canonical positions heavily restrict the possibility to choose from these focusing schemata in each single case. Some canonically postverbal constituents may not move, and therefore the sentences in which they occur conform to the background-first schema of (2a)/(3a) if the postverbal constituents are focused. On the other hand, no canonically preverbal constituent may move to a postverbal position (except for afterthoughts), and therefore sentences with such an expression in focus conform to the focus-first schema of (2b)/(3b). Still, in very many cases speakers may choose between the two schemata. Can we say anything about the factors determining these choices?

We may be able to shed some light on the determinants if we consider what is usually claimed about the default position of foci within an utterance. Most researchers dealing with issues of information structure would agree that the unmarked position of a focus within an utterance is within the verbal phrase, or that the whole verbal phrase should be the focus (cf. Lambrecht 1994: 296ff or Vallduví 1992: 123).[2] This is intuitively plausible, it reflects the tradition of characterizing the function of subjects and frame-adverbials as non-focal, and it also fits together with the focus readings one may get if a sentence is pronounced with a default prosody. In many languages a main accent on the most deeply embedded lexical constituent of a complement phrase will be compatible with foci up to the level of the whole verbal phrase or even beyond (cf. Selkirk 1984, 1995, Cinque 1993 or Schwarzschild 1999). This is no different in Mandarin as witnessed by (1a), in which an accent on *chá* 'tea' makes it possible to interpret *hē chá* 'drink tea' as the focus. Disregarding thetic or all-new utterances with intransitive verbs, a non-default prosody with the main accent on some other element will always result in a narrow

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[2] In Kiss's (1998) focus theory the default VP-foci discussed here are closest to her information foci, whereas the foci preceding the VP come closest to her identificational foci. But Kiss's system cannot be applied to the Mandarin facts because in Kiss's system *only*-foci and *even/also*-foci must be categorized differently: All *only*-foci must be identificational, while all *even/also*-foci must be information foci. This classification cannot be applied to the Mandarin data, because both *only*-foci and *even/also*-foci occur in all positions, the only difference being whether parametric words must be used or not.

focus, or at least in a focus that does not comprise the whole VP, or even the whole utterance. We may therefore state the following tendencies for the choice of focusing systems in Mandarin.

(4)   Tendencies in the choice of focusing systems in Mandarin, depending on intonation patterns:
  (i) Utterances with default intonation contours have focus particles in adverbial position, if a specific focus quantificational type is to be indicated at all.
  (ii) Utterances with non-default intonation contours have focus-background agreement, if a specific focus quantificational type is to be indicated at all.

If the content of these tendencies is mapped onto syntactic categories, the tendencies in (5) follow.

(5)   Tendencies in the choice of focusing systems in Mandarin, depending on the category of the focus:
  (i) Foci within the VP are marked by focus particles in adverbial position, if a specific focus quantificational type is to be indicated at all.
  (ii) Foci outside the VP trigger focus-background agreement, if a specific focus quantificational type is to be indicated at all.

There is a potentially confusing side to this two-fold system of Mandarin focus marking. On the one hand, there is the system investigated in this study: Focus quantificational types are obligatorily marked on the edge of the verbal complex (i.e., probably immediately above the AspP or the M(odal)P; see Shyu 1995) if the focus precedes the verbal complex, and throughout all chapters I have emphasized the high degree of conventionalization, or grammaticalization of this system. Moreover, the conventionalized categories are highly general, systematic, and exhaustive. They are general, because there is only a handful of types of focus quantification to cover all cases. They are systematic, because there exist clear and simple relationships between the different categories. They are exhaustive, because any more specific type of focus quantification one may think of can be subsumed under one of the four general types. Markedness theory makes us expect such high degrees of conventionalization in core areas of grammar. Now it turns out that the focus-background configurations that trigger the highly conventionalized system are really of the non-default kind: Default foci are (part of) VP's, but our foci precede VP's. In other words: The grammaticalized system of parametric words is used in marked focus-background configurations, whereas the un-

marked focus-background structures of VP(-internal) foci do not go hand in hand with the obligatory segmental representation of the focus type.[3]

I only have a tentative idea how to cope with this paradox. Perhaps the normal position of foci is VP-*internal* if they are not restricted to a specific focus quantificational type; and perhaps the normal position of foci is *preverbal* if their interpretation is restricted to a specific focus quantificational type. This idea is not as far-fetched as it may appear to be. A count of parametric uses of *cái* with preceding foci on the first 45 pages of my corpus of radio plays (rp) has yielded 22 tokens. *Zhǐ*, the *only*-word in adverbial position, only occurs eight times in the same stretch of text. This means that if an *only*-focus occurs in this corpus, almost three quarters are of the preverbal kind, and less than one quarter is VP-internal. The hypotheses to be tested against the background of larger samples then are as follows: Foci that are specified for a particular focus quantificational type tend to precede their backgrounds, and they raise if necessary; foci that are unspecified for a particular focus quantificational type tend to follow their backgrounds. This hypothesis fits in well with the claims concerning the quantificational nature of the phenomena investigated in this domain: If there are any foci that undergo quantifier raising, then our foci ought to be among them. Other foci, which are not restricted to any particular quantificational type, may, by contrast, stay *in situ* within VP.

6.2.3   Cross-linguistic parallels and the emergence of the Mandarin system

If focus quantification plays such an important role within Mandarin grammar, we should be able to find more languages with comparable systems. From an areal perspective, the "focus" systems of Tagalog and other Austronesian languages may come to mind first (for a concise reference see Palmer 1994), but upon closer inspection, those systems are quite different from the Mandarin case. In the Austronesian languages verbal morphology reflects the thematic role of a nominal constituent which is highlighted in some way (not generally as a focus as we understand this term here).

Other systems that involve the marking of information-structural categories on the verb, or somewhere within the background, have arisen in different parts of the globe. In section 3.4 we have already discussed the Yukagir case, which involves the verbal marking of the difference be-

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[3] Recall that words like *zhǐ* 'only' or *shènzhì* 'even' may always be dropped without influencing the grammaticality of an utterance.

tween subject focus, object focus, and verb focus. Another area where background marking is found is East Africa. In several Cushitic languages verbs are marked according to whether a certain focus or topic construction is used (Saeed 1999). However, in none of the Siberian or African systems can different categories reflecting different kinds of quantification over alternatives, as in the Mandarin system, be observed.

A language that is, and has been, spoken in an area neighbouring China is Japanese. In earlier stages Japanese did have a grammaticalized system of background marking, the so-called 'Kakari-Musubi' construction. For a recent comprehensive treatment of Kakari-Musubi from a perspective similar to the one taken here, and for further references, cf. Schaffar (2002). The proper treatment of the Kakari-Musubi construction in Old Japanese is a matter of ongoing discussion. Some facts are relatively well established, though. Firstly, Kakari-Musubi is an agreement mechanism by which a verb form is obligatorily marked for a specific kind of nominal. The nominal itself is marked by one of a series of particles, and the verbal marking differs according to the particle used. The different particles can be classified according to whether they occur in assertive focus constructions, in constructions with *wh*-words, or in questions, at least this seems to hold for the Heian era (794–1185 A.D.). Secondly, the clauses in which the Kakari-Musubi mechanism was used arose from cleft constructions involving nominalized verb forms. The agreement mechanism as such constitutes a direct parallel to the Mandarin system investigated in the present study, except for the fact that Japanese, being an agglutinating language, has developed true verbal endings as opposed to the parametric particles of Mandarin. The categories involved are different, though. While the distinctions in the Japanese system (focus vs. *wh*-element vs. question) are clearly quantificational, they do not involve quantifiers that differ in quantificational type as discussed in the Mandarin case. With regard to the historical facts of nominalization from which the Kakari-Musubi system has emerged, we are again confronted with a blind spot of the present study, i.e. the interaction of Mandarin focus-background agreement with aspectual restrictions. If the Mandarin construction likewise had cleft-constructional roots involving nominalizations, careful attention would have to be paid to the interaction of nominalizations, aspectual restrictions, and focusing. Moreover, the neglected field of the different Mandarin focus constructions involving (old) nominalizations, i.e. the *shì... de*-construction and its relatives (cf., among many others, Chiu 1993), will have to enter the picture. The comparison with the Kakari-Musubi system of Old Japanese is sure to lead to a more

fine-grained view of the Mandarin system, but Old Japanese is not likely to have influenced Mandarin by way of language contact in such a way that Mandarin could be said to have adopted the general system of focus-background agreement from Japanese. It is, quite to the contrary, a well-known fact that Chinese has heavily influenced Japanese, especially its lexicon, with reverse borrowings from Japanese to Chinese being recent developments of the past 120 years or so.

Still, one might tentatively assume that language contact has played a role in the emergence of the Mandarin system. In this respect, Manchu may turn out to be important for two reasons. Firstly, it is well-known as a contact language of Mandarin.[4] The second reason why Manchu may be interesting is that Manchu has focus particles to the right of foci. This is nothing special, because Manchu is, like all other Altaic languages, heavily left-branching. Therefore, a focus particle which c-commands its focus must follow the focus. As a consequence, the resulting structures often look like Mandarin sentences from the point of view of linear order, but what is a focus particle in Manchu is a parametric word in Mandarin. Compare (6) and (7). (I have taken (6) from von der Gabelentz's 1832 grammar of Manchu (p. 58), and I have not changed his transliteration.

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[4] Over the past two decades, the strong Altaic (Manchu) influence on Mandarin has been a recurrent topic in Chinese linguistics (Norman 1982, Hashimoto 1986, Okada 1992, Ji 1993, Wadley 1996). The last dynasty of Chinese emperors, the Qing dynasty (1644–1911 A.D.), was of Manchu origin, and Wadley 1996 argues that the Manchus who lived in Beijing soon switched from Manchu to Mandarin as their first language. In the terminology of Thomason & Kaufman 1988, this may be a case of language shift: While many cases of language contact affect the lexicon most, and have little or no influence on the syntax or phonology of the target language, the situation in the postulated Manchu-Mandarin situation of language shift would have been more complex. Among the group of bilingual Manchus in the early times of the Qing dynasty, the regularities of typical borrowing held true: More and more Mandarin words were borrowed from Mandarin into Manchu, without Manchu syntax or morphology being affected. Later on, the Manchus switched to Mandarin as their only language. This kind of Mandarin had only Mandarin lexemes and practically no inflection, but many syntactic structures of Manchu had been preserved. This structurally Altaicized Mandarin became the prestigious standard language of more and more genuine speakers of Mandarin. These speakers may have reanalyzed the Manchu structures of the prestigious language in a way that is natural for a native speaker of Mandarin. Being the prestigious dialect of Beijing, it became the major model for the present-day standard 'pǔtōnghuà'. From the perspective of Mandarin, the resulting state thus looks like a reverse borrowing situation, because the Chinese lexicon is virtually unaffected, but structures of Manchu syntax have found their way into Mandarin.

This scenario of language shift is very plausible, and no strong counter-evidence against it has so far been presented, but it may not be considered an undisputed fact of history.

The guiding principle of the transliteration was to allow for a good result if the transliteration is pronounced as if it were French).[5]

(6)   Manchu (early 19th century)
        Ter-ei   toumen de   EMGERI be
        this-GEN   10,000 DAT once   ACC
        inou same   mouterakô kai.
        also knowing not.can   PRT
        'Among this vast number, one does not even know ONE [thing].'

(7)   *Tāmen dāngzhōng, wǒ (lián) Yī-ge rén   yě   bù   rènshi.*
        they among   I   even 1-CL person YE   not   know
        'I don't even know a SINGLE person among them.'

Look at the Mandarin sentence first. It is an instance of the kind of sentences well-known to us from sections 3.3.1 and 4.3.3: The constituent hosting the focus, i.e. the object nominal, precedes the verb, it may itself be preceded by *lián* 'even', and it is obligatorily followed by parametric *yě*, which has another use as an adverbial focus particle meaning *also*. If we compare the sequence of 'focus constituent + *yě* + negation + predicate' in the Mandarin sentence with that of the Manchu sentence, the similarities are astonishing: The linear sequences of the comparable elements in Mandarin and Manchu coincide, the only relevant difference being that the position which is occupied by a real focus particle in Manchu, viz. *inou* 'also', is occupied by parametric *yě* in Mandarin, while the optional Mandarin focus particle precedes the focus. This similarity is so surprising because the branching directions of present-day Mandarin and Manchu are opposite. My speculative claim here is that the unusual linear make-up of Mandarin parametric sentences may have been modelled according to the Manchu type, but without changing from a right-branching to a left-branching structure. Therefore, the structural relation holding between the original focus particle *yě* 'also' and its interacting focus cannot be interpreted as an instance of a focus particle c-commanding a focus; it must rather be reanalyzed as a focus c-commanding a reflex of the focus type further down in the structure.[6]

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[5] GEN: genitive case marker; DAT: dative case marker; ACC: accusative case marker.

[6] Liu M. (1997) is a study of the diachrony of *jiù*. What Liu terms 'antecedent-consequent linking *jiù*' comes closest to (portions of) my parametric *jiù*, and it is fairly stable as early as in Late Middle Chinese (7th–13th century). At this early time the hypothesized language shift could not have taken place yet. Liu does not study facts of information-structure as we understand this domain here, and therefore it may still be true that Liu's antecedent-consequent linking *jiu* only entered the paradigm of information-structurally sensitive words later.

This idea is certainly in need of more support, and it may turn out that, in the end, it cannot be maintained. But even if Manchu is not the model, the general phenomenon of identical sequential orders with different syntactic structures (across languages, across diachronic stages of a single language) seems to me to be the most promising path to finding an explanation of the emergence of the typologically unusual focus-agreement system as observed in Mandarin.

We are thus left with the typical result of truth-seeking enterprises: More research is needed.

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[XHDC = *Xin Han-De Cidian*]

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8   INDEX

Note to the reader:
Arrows facing upwards ("↑") precede related terms with an index entry of their own.