

## 1. Introduction

Viewed from the perspective of Standard Average European, Mandarin Chinese is a peculiar language. No matter how many of certain alienating takes on Chinese will stand the test of a powerful universalist approach in the end, it seems safe to say that the view from the Far East has quite often changed the Western conception of what one considers natural in natural languages. The present paper investigates a hitherto underinvestigated domain of Chinese grammar within the larger realm of quantification. I wish to demonstrate that several seemingly exotic facts of Mandarin may be subsumed under a single generalization, and that the resulting system populates a blind spot on our virtual map of expression types for different kinds of quantification.

While many canonical Chinese sentences will conform to Diesing's (1992) generalization ('VPs are mapped to the nuclear scope'), a certain non-canonical sentence type will yield the reverse picture: VP's are regularly mapped to the restrictor of the quantificational structure at hand. The core of the system involves information-structural quantification. Parasitic on this, we find certain sub-kinds of modal quantification. Almost all of the data in this paper have been taken from Hole (2004), but the highly condensed synopsis of the empirical domain, the emphasis on the parallel quantificational mappings, and the comparatively thorough treatment of focus quantification are genuine to the present paper.

## 2. Canonical and non-canonical structures: focus marking and modality

Upon first contact, Mandarin focus marking constructions and modal verb constructions look exactly like their English counterparts. (1) and (2) present two examples.<sup>1</sup>

- (1) Lǎo Wáng zhǐ [hē chá].  
Old Wang only drink tea  
'Old Wang only drinks tea.'
- (2) Lǎo Wáng bìxū qù dàshǐguǎn.  
Old Wang must go.to embassy  
'Old Wang must go to the embassy.'

Abstracting away from subtleties that are irrelevant in the present context, the Mandarin structures and the English renderings are alike. The adverbial focus marker *zhǐ* 'only' in (1) may relate to a focus maximally as big as the constituent in brackets, or to a focus encompassing a sub-constituent of the bracketed string. The Mandarin sentence in (2) and its English translation are, again, so similar, that I feel at a loss about how to comment on the structures.

Things change dramatically as soon as we turn to the non-canonical patterns that this paper is about. (3) and (4) furnish us with a first idea of the questions that we're going to deal with.

- (3) Lǎo Wáng zhǐyǒu [chá] \*(cái) hē.  
Old Wang only tea CAI drink  
'Old Wang drinks only tea.'
- (4) [Lǎo Wáng bìxū qù dàshǐguǎn], \*(cái) néng shēnqǐng qiānzhèng.<sup>2</sup>  
Old Wang must go.to embassy CAI can apply.for visa  
'[Old Wang must go to the embassy] to be able to apply for a visa.'/'Only if [Old Wang

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<sup>1</sup> Unless stated otherwise, bracketed constituents mark the largest possible foci in the sentence at hand.

<sup>2</sup> Dotted underlining marks a constituent as necessarily unfocused.

goes to the embassy] can he apply for a visa.’/ (good without *cái* if interpreted as two main clauses: ‘Old Wang must go to the embassy, he can apply for a visa.’)

In (3) the direct object has been preposed, the focus marker has, if compared with (1), been augmented, and an untranslatable, yet obligatory, particle precedes the verb.<sup>3</sup> (5b) is an English paraphrase of (3) that makes explicit a possible partitioning into quantifier, restrictor and nuclear scope of the focus semantic meaning of (3). The assertion made by (3) is given in (5a).<sup>4</sup>

- (5) a. Old Wang drinks tea.  
 b. [There is no p]<sub>QUANTIFIER</sub>  
     [p ∈ the set of contextually salient alternative propositions defined by  
      $\lambda x_{x \neq \text{tea}} [\text{Old Wang drinks } x]$ ]<sub>RESTRICTOR</sub>  
     [p is true]<sub>NUCLEAR SCOPE</sub>.<sup>5</sup>

If we identify the relevant part of the  $\lambda$ -abstracted structure in the restrictor of (5b) with the VP in (3), then the VP contains only material that is mapped to the background, while in (1) the VP necessarily contains the focus.

The contrast between (2) and (4) is of a more intricate nature. Both sentences have the same modal force, they involve propositions under a necessity operator. The first translation of (4) reflects this fact, but at the cost of obscuring the syntactic facts of subordination. In terms of syntax, the righthand clause of (4) is superordinate, and this fact is preserved more accurately by the second translation of (4). In §4 we will have opportunity to understand this sentence type more thoroughly; at the present stage the non-native reader will have to take my word for it that we are really dealing with subordination of the *bìxū* ‘must’-clause on the one hand, but that, on the other hand, the overall modal force of the complete complex sentence is necessity, and not possibility as suggested by the occurrence of *néng* ‘can’ in the righthand matrix clause.

An obvious parallel between (3) and (4) is the fact that both sentences contain the particle *cái*. The generalization that I want to arrive at is that all sentences with particles belonging to the same class as *cái* encode quantificational structures in which the VP’s behind the particles are mapped to the restrictors of the quantificational structures at hand. (I will continue to refer to the predicates following *cái* and the other particles as ‘VP’s’, even though the true category of

<sup>3</sup> The augmented focus marker *zhǐyǒu* is used whenever the focus marker is not in the adverbial position exemplified in (1). Historically, it may be analyzed as ‘only’ + ‘exist’, cf. *yǒu* ‘have, exist’, but a biclausal cleft-analysis for the Chinese sentence in (3) is, at least synchronically, not feasible. See Hole (2004: 272) for more details.

<sup>4</sup> As von Stechow (1994: 133) puts it, “there is an industry devoted to the issue of whether the latter ingredient [i.e., the proposition in the scope of *only*; D.H.] is an implicature (conversational or conventional), a presupposition, or part of the truth conditions. And these days, it is also possible that it is an explicature in the sense of the London school of pragmatics.” I side with the truth-conditional faction, but for the aims of this paper nothing really hinges on this. In what follows, I will refer to the propositions in the scope of ‘only’-words as ‘asserted’. For an in-depth survey of the theories that researchers defend concerning the status of these propositions, see Horn (1996).

<sup>5</sup> It is not at all uncontroversial, or even broadly discussed, exactly how focus-background structures are mapped to tripartite quantificational structures. §3.3 is dedicated to this problem. At that point I justify why I make use of the very format chosen in (5b).

Readers familiar with the von Stechow/Rooth antagonism (von Stechow 1982, Rooth 1985, 1996) in the modeling of focus-background structures may be led to think that (5b) illegitimately combines Roothian and von Stechow components. This objection is easily discarded: The  $\lambda$ -abstracted structure in (5b), which is reminiscent of the von Stechow analysis, is only used as a shorthand notation for sets of alternative propositions as Rooth uses them.

those constituents is probably ‘aspect phrase’ or ‘modal phrase’ (Shyu 1995). I will briefly return to the matter in §3.3) This is in sharp contrast to the VP’s of canonical sentences, both in English and in Mandarin. Just as the VP of *Every boy eats chocolate* is mapped to the nuclear scope of the encoded quantificational structure, the VP’s of modalized sentences are canonically mapped to the nuclear scope. This is illustrated in (6) and (7).

- (6) a. Every boy eats chocolate.  
 b.  $\forall x$  [ $x$  is a boy]<sub>RESTRICTOR</sub> [ $x$  eats chocolate]<sub>NUCLEAR SCOPE</sub>
- (7) a. Old Wang must go to the embassy.  
 b.  $\forall w$   
 [w is a world very similar to the ideal worlds in terms of the ordering source at hand, say, worlds in which things only happen the way required by the regulations for the issuing of visas]<sub>RESTRICTOR</sub>  
 [Old Wang goes to the embassy in w]<sub>NUCLEAR SCOPE</sub>

The reader with some background knowledge in the modelling of modality will have noticed that my quantificational paraphrase of (7a) in (7b) relies (in a somewhat simplified way) on Kratzer’s (1981, 1991) theory of modality. Familiarity with Kratzer’s approach will certainly make §4 of the present paper more readily accessible; my putting to use of Kratzer’s theory will not be fully explicit, though, and I will try to explain things in natural language whenever I make use of notions from her theory. At the present point it suffices to know that, just as in other model-theoretic approaches to modality, necessity is identified with universal quantification over possible worlds (and possibility with existential quantification).

The notion of ordering sources plays a crucial role in Kratzer’s theory. Ordering sources result in partial orderings on possible worlds which allow one to determine the similarity of any given possible world with a possible world that is ideal with respect to some property. The ordering source referred to in (7b) is the degree of similarity with those worlds in which only things are the case that conform to the regulations concerning the issuing of visas.

Let us now turn to the peculiar function of words like *cái* as in (3) in some more detail (§3) before returning to the intricacies of the complex modal structures parasitic on the *cái*-like particles in §§4 and 5.

### 3 Non-canonical structures I: Focus-background agreement

#### 3.1 The conventionalized nature of Mandarin focus-background agreement

We have seen above that (i) the use of *cái* can be obligatory, and that (ii) it is difficult to render its function in an English translation. The relevant examples contrasting canonical adverbial focus marking with non-canonical focus marking co-occurring with *cái* are repeated in (8).

- (8) a. Lǎo Wáng (zhǐ) [hē chá].  
 Old Wang only drink tea  
 ‘Old Wang (only) drinks tea.’  
 b. Lǎo Wáng zhǐyǒu [chá] \*(cái) hé.  
 Old Wang only tea CAI drink  
 ‘Old Wang drinks only tea.’

The same contrast recurs with ‘even’-foci; cf. (9).

- (9) a. Lǎo Wáng (shènzhì) [bù hē chá].  
 old Wang even not drink tea  
 ‘Old Wang doesn’t (even) drink tea.’

- b. Lǎo Wáng lián [chá] \*(dōu) bù hē.  
 old Wang even tea DOU not drink  
 ‘Old Wang doesn’t even drink tea.’

Just as with *zhǐ* ‘only’ in (8), the adverbial focus marker *shènzhì* ‘even’ may be dropped without influencing grammaticality, while the *lián*-marked preposed object goes hand in hand with the obligatory preverbal particle *dōu*.<sup>6</sup>

The generalization in (10) holds in the overwhelming majority of cases.

- (10) If a focus that is marked for a specific type precedes the VP, a particle at the left edge of the VP must be used.

Since the particles at the left edge of the VP co-vary with the semantic type of focus preceding the VP, the resulting system may be analyzed as an agreement mechanism.

- (11) Backgrounded VP’s agree with their preceding foci. The agreement morphemes are the particles at the left edge of the VP, and the agreement categories are the different kinds of focus for which the preceding foci are marked (e.g., ‘only’-foci or ‘even’-foci).

I review the few exceptions to (10) and (11) in Hole (2004), but they don’t seem to threaten the validity of the generalizations in a serious way. Note in passing that the marking of the preverbal foci may be implicit as in (12), but that this doesn’t undermine (11).

- (12) a. Lǎo Wáng [chá] cái hē.  
 Old Wang tea CAI drink  
 ‘Old Wang drinks only tea.’  
 b. Lǎo Wáng [chá] dōu bù hē.  
 old Wang tea DOU not drink  
 ‘Old Wang doesn’t even drink tea.’

The only alternative to assuming implicit or contextual focus marking in (12) would be to say that *cái* and *dōu* themselves are the focus marking devices. This would leave us with an awkward homonymy stipulation for the particles: agreement particles in (8) and (9), but focus markers in (12).

The generalizations in (10) and (11) are not just valid for direct objects and other canonically postverbal material. They likewise apply to elements that never occur in postverbal positions to begin with. (13) provides two examples involving complex sentences.

- (13) a. Zhǐyǒu [Lǎo Wáng lái], wǒ \*(cái) qù.  
 only.if Old Wang come I CAI go  
 ‘Only if [Old Wang comes] will I go.’  
 b. Jíshǐ [Lǎo Wáng lái], wǒ \*(dōu) qù.  
 even.if Old Wang come I DOU go  
 ‘Even if [Old Wang comes], I will go.’

Over the past decade, syntacticians from the generative tradition have come up with several minimalist accounts to get a grip on the syntax of this construction (Gao 1994, Shyu 1995,

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<sup>6</sup> This *dōu* is diachronically related to the comparatively well-known distributive *dōu* ‘each’ as, for instance, studied by Lin (1996, 1998), but it cannot be identified with it at a synchronic level. See Hole (2004: §4.3.1) for the detailed justification for keeping the two uses of *dōu* apart.

Zhang 1997, 2000). However, the feature checking analyses that were formulated leave open the question what makes the observed system a system from the point of view of function or semantics. This is the question that I have addressed in some detail in Hole (2004). In the following sub-section (§3.2) I would first like to give a summary of the overall architecture of this sub-system of Mandarin grammar. I will then move on to describe each focus quantificational type in turn, and I will aim at justifying the arguably most controversial type of conventionalized focus quantification that I propose: negated universal quantification over alternatives. §3.3 will deal with the mapping of focus-background structures to quantificational structures.

### 3.2 The focus quantificational system of Mandarin focus-background agreement

The gist of the focus quantificational system of Mandarin focus-background agreement may be summarized as in (14).

- (14) a. Each classic quantificational type ( $\exists$ ,  $\forall$ ,  $\neg\exists$ ,  $\neg\forall$ ) constitutes a basic agreement category in Mandarin focus-background agreement.  
 b. Each focus quantificational type is covered by a distinct agreement marker.  
 c. Negated universal quantification ( $\neg\forall$ ) forms an integral part of this system, despite claims found in the literature that this type of quantification does not conventionalize/hardly ever conventionalizes.

Let us try to get an idea of the empirical range covered by the four focus-quantificational types mentioned in (14). This survey will be very condensed; it mainly serves to give the reader an impression of how large the amount of configurations really is that trigger focus-background agreement. For the more complete treatments see Hole (2004) and the references cited therein.

#### A. Negated existential quantification over alternatives ( $\neg\exists$ )

Negated existential quantification is the focus type which triggers the use of *cái*. In most cases, translations of sentences with *cái* into English will contain words like *only*, *merely* etc.; moreover, *not...until*-sentences belong in this domain. In Hole (2004), the long-standing debate of whether a semantics for ‘only’-foci must make reference to scales is given a negative answer. Note again (cf. (13a)) that the domain of *cái*-sentences encompasses complex ‘only-if’-sentences and related complex sentence types (‘only because...’, ‘only after...’, ‘only when...’ etc.). The focus semantics of all these sentence types may be reduced to the exclusion of all relevant alternatives, provided the set of relevant alternatives has been defined so as to exclude trivial alternatives.

#### B. Universal quantification over alternatives ( $\forall$ )

As seen in (9b) and (13b), ‘even(-if)’-constructions fall under that focus-semantic category which is agreement-marked by *dōu*. The proper treatment of ‘even’-foci has been a recurrent topic over the past two or three decades. Krifka (1995) has – in my eyes, convincingly – corroborated the claim that universal quantification over focus alternatives is the right quantificational notion to deal with ‘even’-constructions. Thus, a sentence like *John doesn't even eat chicken meat* will presuppose that John doesn't eat any of the contextually salient kinds of meat either, say, beef, or pork. The whole system of Mandarin that ‘even’-foci with *dōu*-marked backgrounds are embedded in underpins Krifka's claim: the two other large areas where *dōu* marks the backgrounded VP's are, (i), constructions with (strong) negative polarity items (cf. (15)) and, (ii), constructions with free-choice items (cf. (16)).

- (15) a. NPI'S REFERRING TO SMALLEST QUANTITIES (*penny/red herring*-type NPI's)  
 Lǎo Wáng yī-[dī] jiǔ \*(dōu) méi hē.  
 Old Wang 1-drop wine DOU not.have drink  
 'Old Wang hasn't had a [drop] of alcohol.'
- b. INDEFINITE PRONOUNS AS NPI'S (*anything*-type NPI's)  
 Lǎo Wáng [shénme] \*(dōu) bù chī.  
 Old Wang anything/what DOU not eat  
 'Old Wang doesn't eat [anything at all].'

Both negative polarity constructions and free-choice constructions are easily shown to involve universal quantification over focus alternatives. The propositions underlying each sentence in (15) are semantically stronger than any relevant alternative propositions that have a semantically more specific term in the position of the NPI's (in Krifka's theory an NPI like *shénme* 'what/anything' denotes the most general property that any thing has, such that it is true to predicate this property of a thing inasmuch as it is a thing): If Old Wang, as in (15a), doesn't drink a drop of alcohol, any other quantity is likewise excluded as being consumed by him, simply because any alternative quantity will be larger than one drop, and any assertion of a proposition with such a larger amount of alcohol instead of 'one drop' is already entailed by the assertion of (15a); likewise, if Old Wang in (15b) doesn't eat anything that has the property 'thing' he doesn't eat anything at all, because every alternative predicate will entail the property 'thing', or have it as part of its specification of meaning. In both cases, the assertion allows us to make a statement concerning all relevant alternative propositions, viz. that they are all true.

The case of free-choice items as illustrated in (16) is slightly different.<sup>7</sup>

- (16) a. INDEFINITE PRONOUNS AS FREE-CHOICE ITEMS  
 Wúlùn shéi \*(dōu) lái.  
 no.matter who DOU come  
 'No matter who, everyone comes.'
- b. A-NOT-A-QUESTION DISJUNCTIONS AS FREE-CHOICE ITEMS  
 Lǎo Wáng bùguǎn xià bu xià yǔ \*(dōu) huì lái.  
 Old Wang no.matter fall not fall rain DOU will come  
 'Old Wang will come, no matter whether it's raining (or not).'

In these cases the set of alternative propositions is not characterized by different, i.e. stronger, predicates than the highly general predicates 'human(x)' or 'thing(x)' as with the NPI's in (15); instead, all the possible different propositions resulting from (arbitrarily) fixing the referent of the pronominal in (16a) define the relevant domain of quantification. If the model with respect to which (16a) is interpreted contains the individuals John, Bill and Mary, then (16a) will say that, e.g. *John comes* is true, but that *Bill comes* and *Mary comes* would likewise have been true; or that (if the reference of the free-choice item is fixed differently) *Bill comes* is true, but that *Mary comes* and *John comes* would likewise have been true; or that, finally, *Mary comes* is true, but that *John comes* and *Bill comes* would likewise have been true. If we interpret the focus accent on the free-choice item in (16a) as being a focus on the choice function, with this focus relating to alternative choice functions that could have been

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<sup>7</sup> Never mind the fact that both *shéi* in (16) and *shénme* in (15) belong to the same class of indefinite pronouns in Mandarin. In Hole (2004: 223) I present evidence to the effect that the Mandarin negative polarity construction with indefinite pronominals must be distinguished from Mandarin free-choice constructions with indefinite pronominals.

selected to assign the variable a value, then it becomes clear why the kind of quantification at hand is a sub-kind of focus quantification.

Although seemingly different, the disjunctive case in (16b) is entirely parallel. Note for a start that the basic kind of *yes/no*-question formation in Mandarin is disjunctive. (17) provides an example.

- (17) Nǐ qù bu qù?  
you go not go  
'Are you going?'

In nice correspondence with a Hamblin-style semantics of questions (Hamblin 1973), *yes/no*-questions are formed by juxtaposing representatives of the possible answers, i.e. the negated and the non-negated predicates. This kind of juxtaposition behind *wúlùn* 'no matter' in (16b) has the very same function as the free-choice item *shéi* in (16a): The positive or the negative value may be chosen, but only one. Whichever value is chosen, the assertion will always come out true and this, again, boils down to universal quantification over alternatives.

This concludes the small survey of sub-kinds of universal quantification over focus alternatives in Mandarin which trigger the use of *dōu*. Let us now turn to the interesting and potentially more controversial case of negated universal quantification over alternatives.

### C. Negated universal quantification over alternatives ( $\neg\forall$ )

The right-hand lower O corner of the classic square of opposition is the step-child of traditional theories of quantification. Horn (1972) was among the people to put the fact that negated universal quantification rarely finds conventionalized lexical expression on the agenda of modern linguistics: Sequences of quantifiers like English *not all* do not lead to complex quantifiers of the type *\*nall*, even though contractions and univerbations in the domain of quantifiers expressing negation plus something else are the diachronic norm in Germanic languages. Two kinds of research traditions in this domain may be distinguished. One line of argumentation says that there is something wrong with the traditional square of opposition, and that the lack of quantifiers like *\*nall* is to be expected, because the required type of quantification can be reduced to something else. Such an analysis has recently been formulated by Seuren (2003). The other tradition will say that the square of opposition is fine the way it has been handed down to us from Aristotle, Boethius and the Middle Ages, but that independent factors render the quantificational type 'not all' unnecessary or dysfunctional in most natural language interactions. This dysfunctionality or rareness of use obstructs lexicalization processes. Horn (1989, this volume?) is a proponent of such a 'good idea – no gain' approach to the lexical gap in the square of opposition. He couches his argumentation in the context of neo-Gricean implicature reasonings, complemented by an empirically well-grounded principle which gives precedence to the lexicalization of non-negated terms over the lexicalization of negated ones. In our context, lexicalization of existential quantification, complemented by analytically expressed inner negation, will yield the O-type of quantification if needed, because  $\exists\neg$ -type quantification is equivalent to  $\neg\forall$ -type quantification. Moreover, and this is where the neo-Gricean tradition kicks in, most contexts of use will simultaneously allow for the two competing quantificational statements *Some x's are y* (existential quantification, or the lower left-hand I corner of the square of opposition) and *Not all x's are y*; the contexts in which only  $\neg\forall$  is true are negligible from the point of view of lexicalization needs. Löbner (1990) has demonstrated that the lexicalization gap in the  $\neg\forall$ -corner is just a matter of degree, and he collects several four-membered lexical fields covering each corner of the square of opposition.

One of the aims of this article is to add plausibility to the Horn-Löbner position, and to discredit the idea that the square of opposition is a flawed construct. I would also like to demon-

strate that what is a negligible quantificational option in some empirical domain of quantification is a highly natural and indispensable one in another.

What would negated existential quantification in the domain of focus alternatives amount to? Let us imagine a discourse in which the property of being pale-faced is being discussed. One of the interlocutors looks pale, and his friend expresses his concern. The pale-faced person says (18) to appease his friend.

- (18) Computer nerds are pale, old-style aristocrats tend to be pale, so what’s wrong with me being pale? Don’t worry!

The speaker focuses the subjects *computer nerds* and *old-style aristocrats* in this context, and what he wants to express is that while it is not a necessary condition for people to be pale, at least some other people are conventionally considered pale, but this doesn’t necessarily mean their health is in danger. This focus-background structure is compatible with *also*-type existential focus quantification: other people are pale, too. It is, however, also compatible with negated existential focus quantification: Other people may be pale, too, but not all other people are pale. Otherwise the discourse participants probably wouldn’t bother to talk about this topic at all.<sup>8</sup> This, in turn, means that large proportions of all natural focus background structures conform to this focus quantificational type: We typically assert things that are contingent, and saying that something is contingent is another way of saying that the same is not true of all others that belong to the same larger class. The  $\neg\forall$ -type of focus semantics boils down to the weakest possible commitment wrt. to the truth or falsity of alternative propositions that still involves a statement about truth and is not just a consideration of alternatives in the sense of Rooth (1996).<sup>9</sup>

Returning to Mandarin, we will thus expect to find a high token frequency of the related particle, i.e. *jiù*, in texts and conversations – recall that these particles *must* be used if the respective syntactic configuration arises –, and this really holds true: Considering the four particles investigated here, *jiù* is by far the most frequent one.

Here are two Mandarin examples that give us a first impression of how the system works.

- (19) a. Oūzhōu rén      dāng zhōng, [Ìdàlì rén]      jiù      zhǎng-zhe hēi      tóufa.  
 Europe people among Italy people JIU grow-ASP black hair  
 ‘Among Europeans, [Italians] have black hair.’  
 b. #Dōng-Yā rén      dāng zhōng, [Riběn rén]      jiù zhǎng-zhe hēi      tóufa.  
 east-Asia people among Japan people JIU grow-ASP black hair  
 ‘Among the people from East Asia, the [Japanese] have black hair.’

(19a) is fine, because among the alternatives that are explicitly referred to, there are peoples whose members are generically said to have fair hair, say, Norwegians (let’s disregard the true proportion of fair-haired people among Norwegians for the sake of the argument and stick to the stereotype). (19b) is infelicitous, and this fits in well with our theory about *jiù*, because we know that among the competitors from East Asia, all others (stereotypically) have black hair, too. One might object now that this minimal pair relies on a rare kind of discourse

<sup>8</sup> This is not to say that talking boils down to ‘conveying information that is new to the hearer’. What matters here is that the conventionalized systems of focusing in a given language may be described in terms of the (assumed) knowledge states of the interlocutors.

<sup>9</sup> In the same vein as researchers like Büring (2003b) I believe that focus ought to be seen as a unitary phenomenon. The differences between different purported kinds of foci may probably be reduced to (i) the presence or absence of certain emphatic components of meaning (cf. Krifka 1995), (ii) the size of the contextually relevant set of alternatives, and (iii) the different possible predicates taking *p* as an argument in the nuclear scope (on this last point see §3.3).

setting, and that not many situations will arise in which sentences like (19a) with the required focus-background structure will arise. This is true, and the the real domain of application for our allegedly exotic focus type is somewhere else, viz. in the domain of contrastive topics. Look at (20), in which small caps mark the focus constituent and the contrastive topic constituent.

- (20) Rúguǒ xīngqītiān tiānqì [Hǎo]<sub>C-topic</sub>, wǒ jiù Qù pá shān.  
 if Sunday weather good I JIU go climb mountain  
 ‘If the weather is [FINE]<sub>C-topic</sub> on Sundays, I GO MOUNTAIN-CLIMBING.’

(20) is uttered by a passionate mountain-climber, and the sentence, with the indicated information structure, amounts to the following: (i) The speaker goes mountain-climbing on Sundays if the weather is fine, (ii) he may go mountain-climbing if the weather is not 100 per cent fine, but (iii) not all weather conditions are such that he will go mountain-climbing on Sundays, e.g. if there is a snow-storm, or heavy rain. (i) is the assertion of (20), (ii) is what is left open by the conditional semantics induced by *rúguǒ/if*-subordination, and (iii) amounts to the information-structural component of meaning brought into the sentence by the contrastive topic accent on *hǎo* ‘good’, and reflected by agreement *jiù*. The most recent formal account of contrastive topics is Büring (2003a), and we will turn to his work for a single set of examples to see that his analysis is probably fully compatible with the idea that contrastive topichood is one possible instantiation of negated universal quantification over alternatives. One of Büring’s well-known examples is given in (21).

- (21) Q: What did the pop stars wear?  
 [A: The pop stars wore GLITTER COSTUMES.]  
 A’: The [FEMALE]<sub>C-topic</sub> pop stars wore CAFTANS.

In the question-answer sequence (21Q-A), the answer leaves nothing in the question unanswered, and the topic of what the pop stars wore has been exhausted. The sequence (21Q-A’) is different: After A’ has been uttered, the question has only partially been answered, and only part of the discourse topic of what the pop stars wore has been exhausted. Contrastive topics, in general, signal that wrt. so some question under discussion only part of the required information has been given. Büring’s implementation need not concern us here, what matters is that this property of utterances with contrastive topics – not fully exhausting the question under discussion – is really a special instantiation of the information-structural category that we’re interested in: If one predicates some property of some predication base, but indicates that some other predication base under discussion could not be predicated of the same predicate, then this is tantamount to saying that ‘not all contextually relevant alternative sentences are true’.

Let’s return to the frequently observed lexicalization gap in this domain, the *\*nall*-constraint. In Hole (2004: 70f) I discuss the lack of uncontroversial focus markers triggering the use of *jiù*: *Jiù*, itself being an agreement marker, is hardly ever used with focus or contrastive topic markers preceding the focus or contrastive topic (cf. (19) and (20), where no such focus marker is used, either). That is,  $\neg\forall$ -focus quantification is not typically overtly marked, it is just the agreement marker that finds conventionalized expression. Viewed from this angle, the *\*nall*-constraint has its repercussions in Mandarin, but only in the domain of focus marking, and not in the domain of focus-background agreement.<sup>10</sup>

<sup>10</sup> There are at least two focus marking devices that necessarily trigger the use of *jiù*, *zhǐ-yào* ‘only-must, if’ and *guāng* ‘alone (postnominal)’. Either marker is of an unusual kind, and it seems safe to say that non-

D. Existential quantification over alternatives ( $\exists$ )

Existential quantification over focus alternatives amounts to the *also*-kind of focus quantification, often referred to as ‘additive focusing’ (König 1991). If I buy also shoes, this presupposes that there is something else which I buy, say, socks, or a winter coat. In a way that Hole (2004) is not fully explicit about this kind of background marking is a bit problematic in Mandarin. The main problem is that the typical adverbial focus marker of existential focus quantification and the related agreement marker are homophonous. Both functions are fulfilled by *yě*. It is, thus, more difficult to see right from the start that a focus marker *yě* and a background marker *yě* should be distinguished. (22) gives two examples, the first one illustrating a clear case of (omissible) focus marking by *yě*, and the second one a clear case of (obligatory) agreement expressed by *yě*.

- (22) a. FOCUS-MARKING *YĚ*  
 Lǎo Wáng (yě) hē-le chá.  
 Old Wang also drink-PRF tea  
 ‘Old Wang (also) drank tea.’
- b. AGREEMENT-*YĚ*  
 Lǎo Wáng lián chá \*(yě) bù hē.  
 Old Wang even tea YE not drink  
 ‘Old Wang doesn’t even drink tea.’

A second, minor, issue arises from the ability of focus-marking *yě* to occur in adverbial position *after* its focus, and this topological property normally reserved for the set of focus-background agreement particles adds to the difficulty to keep the two uses of *yě* apart. However, focusing *yě*’s ability to occur after its focus is entirely parallel to the English use of stressed *also* in *PAUL has ALSO arrived*. Just as *also* must be stressed in such sentences with preceding contrastive topics (cf. Krifka 1998), non-agreement *yě* must be stressed under the same circumstances. Agreement particles are never stressed. The interested reader is referred to Hole (2004: 42–44) for the more detailed justification of distinguishing a separate non-agreement marking use of *yě*.

The third peculiarity to be observed in the domain of existential focus quantification is a slight asymmetry of the relationship of *yě* ( $\exists$ ) and *dōu* ( $\forall$ ) on the one hand, and of *jiù* ( $\neg\forall$ ) and *cái* ( $\neg\exists$ ) on the other. Turn back to (22b) to see the point. Agreement-*yě*, the agreement marker for existential focus quantification, is used even though the focus itself is explicitly marked for universal focus quantification by *lián* ‘even’ (see part B of the present section). In itself, this is not a problem, because universal quantification over a non-empty domain entails existential quantification: If all alternatives are true, then some alternative is true. The asymmetry becomes only evident if we compare these facts with the contrasting case of *cái* ( $\neg\exists$ ) vs. *jiù* ( $\neg\forall$ ). With a preverbal focus explicitly marked as an ‘only’-focus, *cái* must be used, and the use of *jiù* is deviant; this is demonstrated in (23).

- (23) Lǎo Wáng zhǐyǒu [chá] cái/\*jiù hē.  
 Old Wang only tea CAI/JIU drink  
 ‘Old Wang drinks only [tea].’

(23) with *jiù* is bad even though ‘no contextually relevant alternative proposition is true’ entails ‘not all contextually relevant alternative propositions are true’. I have nothing conclusive

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suprasegmental focus marking of negated universal quantification over focus alternatives is heavily dispreferred in Mandarin. For some more discussion, see Hole (2004: 70f, 249–258).

to say about this asymmetry in the system, except that the feeling of deception seems to me to be stronger if  $\neg\forall$ -type quantification is used in a situation warranting  $\neg\exists$ -type quantification, than if  $\exists$ -type quantification is used in a situation warranting  $\forall$ -type quantification: If someone says *I have eaten some of your candies* while he has really eaten all of my candies, this is deceiving, but the person may get away with it. If somebody says *I have not done all the things you asked me to do* while he has really done nothing at all, this is more like a lie. Expressed in terms of a set theoretic generalized quantifier view, the difference seems to be that the intersection of the domain set and of the range set is – with only few exceptions – not empty with both  $\forall$  and  $\exists$ -type quantification, whereas the intersection is necessarily empty with  $\neg\exists$ -type quantification, but preferably not empty with  $\neg\forall$ -type quantification. This, in turn, leads to a more drastic difference in most contexts if negated universal quantification is signalled in a situation that warrants negated existential quantification. I will leave these considerations as sketchy as they are now, since the reported asymmetry does not appear to threaten the overall analysis of focus-background agreement in Mandarin.<sup>11</sup>

### 3.3 Mapping focus-background partitionings to tripartite quantificational structures

Let us assess the results of the preceding paragraphs within the overall plan of the paper. The highly systematic core of the conventionalized module of Mandarin focus-background agreement was reviewed, and we had opportunity to see that the relevant agreement markers *cái*, *jiù*, *dōu* and *yě* follow the information-structural categories that they co-vary with. Their position is fixed, they occur at the left edge of the larger verbal complex of the main predication. This yields the marked focus-background topology in (24a).<sup>12</sup> (24b) is the canonical focus-background topology found with run-of-the-mill cases of adverbial focus marking not only instantiated by the respective Mandarin focus markers *zhǐ* ‘only’ or *shènzhì* ‘even’, but also by adverbial uses of *only* in English.

(24) a. The non-canonical focus-background topology triggering background-agreement

$\left(\begin{smallmatrix} \text{back -} \\ \text{ground} \end{smallmatrix}\right) \text{FOCUS} \left(\begin{smallmatrix} \text{back -} \\ \text{ground} \end{smallmatrix}\right) + \textit{cái} / \textit{jiù} / \textit{dōu} / \textit{yě} + \text{background}$

b. The canonical focus-background topology with adverbial focus markers

$\text{background} + \textit{zhǐ} / \textit{shènzhì} / \dots + \left(\begin{smallmatrix} \text{back -} \\ \text{ground} \end{smallmatrix}\right) \text{FOCUS} \left(\begin{smallmatrix} \text{back -} \\ \text{ground} \end{smallmatrix}\right)$

The right-hand backgrounds of (24a) are at least VP’s and probably, as Shyu (1995) claims, non-epistemic modal phrases or aspect phrases. As said in §2, this kind of partitioning into focus and background regularly yields focus quantificational structures in which the VP is identified with the background of the focus quantificational structure. The opposite is true of the canonical focus-background topology in (24b): The VP’s following the adverbial focus markers *zhǐ* ‘only’, *shènzhì* ‘even’ etc. must contain the focus relating to the adverbial focus markers.

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<sup>11</sup> There is more to be said about the peculiarities of agreement-*yě* than we have space for. A further restriction governing the occurrence of *yě* has most likely to do with veridicality (for the recent putting to use of this concept cf. Zwarts 1986, 1995, Giannakidou 1997). Agreement-*yě*, if used in constructions involving indefinite pronouns as discussed in part B of the present section, is only licensed in non-veridical contexts, i.e. in the scope of a sentence-level operator which does not entail that the embedded proposition is true. Such sentence-level operators are, for instance, possibility modals, or negation. For more details see the aforementioned references, or Hole (2004: 86–89).

<sup>12</sup> The focus-background topology of (24a) glosses over the special case of C-topics triggering the use of *jiù* as discussed in §2.B. Since both foci and C-topics relate to type-identical alternatives provided by the context, I will leave the simple notation of (24a) as it is. We should keep in mind, though, that C-topics and foci are both able to trigger this kind of information-structurally marked topology.

From what was said in (5b) (repeated here as (25b)), it is not immediately clear that the focus of a focus-background structure should be mapped to the nuclear scope of a quantificational structure.

- (25) a. Old Wang only drinks TEA.  
 b. [There is no p]<sub>QUANTIFIER</sub>  
     [p ∈ set of contextually salient alternative propositions defined by  
     λx<sub>x≠tea</sub> [Old Wang drinks x]]<sub>RESTRICTOR</sub>  
     [p is true]<sub>NUCLEAR SCOPE</sub>.

The only thing we know for sure is that information-structural backgrounds can plausibly be mapped to the restrictor of the relevant quantificational structures. The way (25b) is stated, one is led to believe that the focus, too, belongs in the restrictor, because this is the only place where it is referred to in (25b), and that only the predication (not assertion!) of truth of the alternative propositions is taken care of in the nuclear scope. To tackle the matter, we will have to take a more precise look at the way focus quantification has been modelled above, and at how this compares with other proposals that are on the market.

There is indeed a strong tendency in the literature to identify the focus with (part of) the nuclear scope of quantificational structures. Partee (1995: 546), for instance, proposes such a mapping, but not all proponents of such a mapping are fully explicit about how they derive it.<sup>13</sup> (26) provides two typical variants of the relevant meaning component of ‘only’-words that may be found in the literature, and they differ in quantificational type from the partitioning assumed here in ways to be discussed immediately below.

- (26) PARTIAL MEANING OF SENTENCES WITH ‘ONLY’-WORDS, STATED IN TERMS OF UNIVERSAL QUANTIFICATION  
 a. ‘Structured-meanings style’  
     ∀x [(background(x)) is true]<sub>RESTRICTOR</sub> [x = focus value]<sub>NUCLEAR SCOPE</sub>  
 b. ‘Propositional style’  
     ∀p [p ∈ set of alternative propositions & p is true]<sub>RESTRICTOR</sub>  
     [p ⊂ asserted proposition]<sub>NUCLEAR SCOPE</sub><sup>14</sup>

Representations like (26a) assign the focus its unequivocal place in the nuclear scope, and with such an analysis in mind Partee’s assignment appears to be fully warranted. A Rooth-style (Rooth 1985) analysis based on universal quantification as in (26b), which crucially relies on alternative propositions instead of just alternative focus values, has a mapping problem similar to our basically Roothian representation in (25b). In both representations it is not fully clear which quantificational component the focus really belongs to; from a purely technical perspective the focus constituent could either be identified with part of the restrictor, or with part of the nuclear scope in (26b). Scale reversals, among other effects, pose awkward challenges for structured-meaning approaches to the semantics of ‘only’-words and other focus markers.<sup>15</sup> Therefore, I strongly prefer a Rooth-style approach to focus semantics. But why

<sup>13</sup> There exists an explicit account of the required mapping by Bende-Farkas, Kamp and Riester (2003). At the time when this paper was written I only had their handout as a source of reference, and I wasn’t able to reconstruct the authors’ analysis in full.

<sup>14</sup> See fn. 15 for the reason why, instead of identity, entailment is used in the nuclear scope of (26b). For more related discussion, the reader is referred to Jacobs (1983) and Löbner (1990).

<sup>15</sup> For more details, see Hole (2004: §4.1). The gist of the argument in the latter reference is as follows. In *Paul has eaten only THREE apples*, it is excluded that Paul has eaten more than three apples. *Only* as in *Only if Paul eats THREE apples will he have enough*, on the other hand, excludes numbers *lower* than ‘three’. The identification of the values to be excluded is not a problem for a proposition-based focus semantics. On such an account,

don't we just follow the Roothian tradition and subscribe to (26b), instead of (25b)? What is the real difference between a representation as in (25b), and one as in (26b)? How come two different quantifiers are used? The answer has to do with the way the domain of focus quantification is delimited. In orthodox Roothian analyses, the domain of quantification (Rooth's 'p-set') comprises the asserted proposition ('all the propositions which are true must be identical to the asserted proposition'); on my approach the asserted proposition is excluded from it ('there is no proposition – apart from the asserted one and the ones entailed by the asserted proposition – which is true'). On the 'negated existential' analysis of (25b), quantification may only be over the complement of the asserted proposition within the overall set of type-identical propositions, because otherwise negated existential focus quantification would lead to the contradictory result that what is asserted is false ('there is no proposition within the set of alternative propositions including the asserted proposition which is true'). We are able to see now what the difference between (25b) and (26b) is: The alternative propositions in the restrictor of (25b) contain one proposition less than the alternative propositions in the p-set of (26b), viz. the asserted proposition. But what is the advantage of discarding Rooth's p-sets? The answer is simple: It is only those domains of focus quantification that exclude the asserted propositions from the domains of alternatives that allow us to derive in a parsimonious fashion the focus semantic categories needed in Mandarin. Like this we are able to derive the focus quantificational types in (27) in a very simple way.

- (27) a. All alternatives are true.  
 b. Some alternative is true.  
 c. No alternative is true.  
 d. Not all alternatives are true.

With equally simple means, these four types cannot be derived in the orthodox Roothian system. As said above, if we allow the quantifier of a structure like (26b) to vary for the range of possibilities in (27), we obtain at least one contradictory structure: ' $\neg\exists p [p \in \text{the set of alternative propositions including the asserted proposition} \ \& \ p \text{ is true}] [p \subset \text{asserted proposition}]$ '. This structure is contradictory because no proposition from the set of alternatives, not even the asserted one, comes out true. To be sure, the system resulting from (27) may be arrived at with Roothian p-sets if more changes in the quantificational structures are made. (28) provides such a set of quantificational statements to cover the same semantic range as the quantificational types of (27).<sup>16</sup>

- (28) a.  $\forall p [p \in \text{set of alternative propositions} \ \& \ p \text{ is false}] [p \text{ contradicts the assert./presupp.}]$   
 b.  $\exists p [p \in \text{set of alternative propositions} \ \& \ p \text{ is true}] [p \not\subset \text{assertion/presupposition}]$   
 c.  $\forall p [p \in \text{set of alternative propositions} \ \& \ p \text{ is true}] [p \subset \text{assertion/presupposition}]$   
 d.  $\exists p [p \in \text{set of alternative propositions} \ \& \ p \text{ is false}] [p \not\subset \text{assertion/presupposition}]$

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only those alternatives/alternative propositions are considered, and eventually excluded, that are not trivial alternatives, because their exclusion would lead to a contradiction. In our first sentence, propositions with numbers lower than 'three' are disregarded, in the second sentence alternative propositions with numbers higher than 'three'. It is very costly to model this difference in a structured-meanings approach.

<sup>16</sup> I am glossing over the difference between presupposition and assertion in (28). As said in fn. 4, researchers are notoriously divided over the question whether *Paul is coming* is part of the assertion/an entailment of *Only Paul is coming*, or a presupposition, or something else. With 'also'-words it seems to be clear that presupposition is the right notion, whereas the universal type of focus quantification triggering the use of *dōu* with NPI's as treated in §2.B again involves entailment. It is like chickening out to put this into a footnote, but I have to assume that in our domain, and on the relevant level of analysis, the difference between assertion/entailment and presupposition does not matter.

One disadvantage of (28) over (27) is the fact that, with alternatives including asserted propositions, the changes in the quantificational structures are not local: We get differences in the quantifiers, in the restrictors, and in the nuclear scopes, while in our system, the one with ‘genuine’ non-asserted/non-presupposed alternatives as summarized in (27), the changes are strictly local and only affect the quantifier. Provided the Mandarin focus semantic system has been described properly by Hole (2004), the approach to focus quantification that follows Rooth only half-way will have an advantage over the one that follows him all the way to p-set formation: Reference to alternative propositions, as opposed to just alternative focus values, is valuable (see fn. 15); p-sets including the asserted proposition, however, lead to a system of inelegant focus quantificational types.

Recall the loose end from above: My focus semantic types may allow for a simple statement of quantification over alternatives, but they don’t seem to allow for the accommodation of the focus in the nuclear scope. The remainder of this section is dedicated to showing that the focus may very well be argued to be mapped to the nuclear scope in our system, and possibly so in a way that captures more of the true nature of focalization than the other mappings.

So far, we have only looked at the problem in a very technical fashion: We have looked at candidate quantificational structures, and we have checked where in those structures the focus value must be represented. The two competing structures for ‘only’ are given again in (29) and (30).

(29) ‘Only’-quantification – ‘Rooth style’

$\forall p [p \in \text{p-set \& } p \text{ is true}]_{\text{RESTRICTOR}} [p \subset \text{asserted proposition}]_{\text{NUCLEAR SCOPE}}$

(30) ‘Only’-quantification – ‘*cái* style’

$\neg \exists p [p \in \text{set of non-trivial alternative propositions defined by}$

$\lambda x_{x \neq \text{focus value}} [\text{background}(x)]]_{\text{RESTRICTOR}} [p \text{ is true}]_{\text{NUCLEAR SCOPE}}$

Since only those  $p$ ’s in (29) are true that are asserted (or entailed by the assertion), and since these  $p$ ’s contain the focus value (or the relevant value of the entailment), the focus seems to have its position in the nuclear scope. In our system in (30), however, the  $p$  of the nuclear scope may take the value of any relevant and non-trivial alternative proposition, but not that of the asserted proposition. The focus does not seem to be accomodatable in the nuclear scope. As alluded to above, this is probably a superficial way of looking at things. The insufficiency lies in the tacit assumption that the semantic import of focusing is a function of the focus value and that, therefore, the focus function is somehow “inside” the focus value. But if one tries to determine what focus really is, the anchoring in the focus value becomes doubtful. There is a consensus that foci relate to alternatives. Rooth’s focus meanings are a way of modelling this relating to alternatives. These technical focus meanings are sets of type-identical expressions that may be used in the position of any constituent that forms part of a focus-background structure. The focus meaning of a focus is thus identified with the set of type-identical expressions that may be used in the position of the focus. In a given context, we thus get a focus meaning of an utterance that comprises as many members as alternatives to the (single) focus are related to. In the Mandarin system under discussion, and with ‘only’-words in general, something about the truth of alternative propositions is stated. But this is not the most general function of foci. As pointed out by Rooth (1996), Büring (1997), Schwarzschild (1999) and many others, focusing basically means ‘considering/evoking alternative propositions’, and not ‘asserting or denying alternative propositions’. It doesn’t matter here how ‘considering/evoking’ is spelled out formally, what matters is where the locus of the component of considering is in the tripartite structure of focus quantification. It seems clear that the notion of ‘considering’ comes in as a predicate above the *true*-predicate in the nuclear scope of (30), or as a predicate replacing it. Thus, if ‘focusing’ really means ‘considering (the

truth of) alternatives’, our representation in (30) is precisely what we need to accommodate this finding in the tripartite structure format: The true focusing/considering happens in the nuclear scope, and the restrictor just sets the scene. Seen from this angle, the representation in (29) suddenly looks grossly inadequate: the special instantiation of ‘considering’, viz. ‘predicating truth’ (N.B.: not ‘asserting truth’!) is done in the restrictor, and the nuclear scope is left with adding some component that looks peripheral from our new perspective.

If this view of the mapping of focus-background structures to quantificational structures can be corroborated with more evidence, we would have a beautifully plausible analysis. The reason for its plausibility lies in the fact that notions which typically conventionalize or lexicalize in natural language are local within the tripartite structure format: Focus markers like *only* are quantifiers (and nothing else), and the fact that something is in focus (however this is marked) corresponds to the predicate of considering in the nuclear scope (and to nothing else).<sup>17</sup>

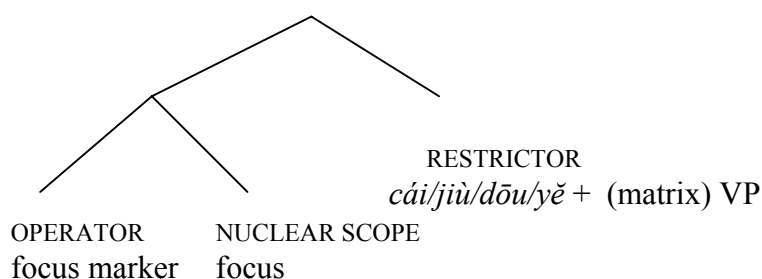
### 3.5 Conclusions of §3, and outlook on the rest of the paper

We have reviewed the major design features of focus-background agreement in Mandarin. I have tried to emphasize the highly systematic nature of the investigated phenomenon, and we’ve made some effort to map the focus-background partitioning to a tripartite quantificational structure. While the mapping of material to the nuclear scope may be controversial, the mapping of the background to the restrictor of the quantificational structure will probably go unchallenged. In what follows, it is mainly the mapping of the background VP to the restrictor that we’ll be interested in. Therefore, readers who don’t share my view of focus-background partitionings need not disembark from the investigation at the present point. The main point of §§4 and 5 will be to show how modality and focus background-agreement combine to yield an unusual, though theoretically desirable, structure that accommodates modal ordering sources in backgrounded matrix VP’s. §4 deals with *ad-hoc* modal ordering sources, §5 elaborates on conventionalized markers for ordering sources.

### 4. Non-canonical structures II: *Ad-hoc* main clause modal restrictors

In a somewhat simplified way, the focus-background structures of §3 may be depicted hierarchically as in (31).

(31) Syntactic mapping of focus-background agreement structures in Mandarin



The parenthesized reference to *matrix* VP’s in (31) is supposed to remind us of the fact that focus-background agreement also occurs in complex sentences. (32) (=13a)) is such a complex sentence.

<sup>17</sup> At this point it is important to distinguish between ‘only’-words as impossible DP-quantifiers, which would be non-conservative, and ‘only’-words as good focus quantifiers: ‘No alternative is true’ entails ‘No alternative is an alternative that is true’. As focus quantifiers, ‘only’-words are conservative.

- (32) Zhǐyǒu [Lǎo Wáng lái], wǒ cái qù.  
 only.if Old Wang come I CAI go  
 ‘Only if [Old Wang comes] will I go.’

The focus of (32) is (in) the subordinate clause, the focus marker is likewise in the subordinate clause, and the focus-background agreement marker is a constituent of the matrix clause, which contains (the largest portion of) the restrictor material. Provided one has a compositional solution for the semantics of ‘only-if’-clauses, (32) does not pose any further problems (for the requisite discussion of conditionality and ‘only-if’-clauses (in Mandarin) see, among many others, von Stechow 1994, 1997 or Hole 2004: 129–138 and the references cited there). The more interesting case, and the one in which modality enters the scene, is exemplified in (33). It, too, was discussed in §2 in a preliminary fashion.

- (33) [Lǎo Wáng bìxū qù dàshǐguǎn], cái néng shēnqǐng qiānzhèng.  
 Old Wang must go.to embassy CAI can apply.for visa  
 ‘Only if [Old Wang goes to the embassy] can he apply for a visa.’/  
 ‘[Old Wang must go to the embassy] to be able to apply for a visa.’

The descriptive problem with (33) was as follows: If we translate it as an ‘only-if’-conditional, the modal of necessity in the first clause is in the way (‘Only if he (#must) go(es) to the embassy can he apply for a visa’). If we treat the first clause as superordinate (this is done in the second translation of (33)), we’re ignoring the syntactic structure, which undoubtedly embeds the first clause within the second. Regarding the matter of subordination I put the suspicious reader off till the present section in §2. (34), finally, presents a sentence that provides strong evidence that the first clause in structures like (33) is syntactically subordinate.

- (34) Tā bìxū [xià yǔ] cái lái ma? (Eifring 1995: 223)  
 (s)he must fall rain CAI come Q  
 ‘Does (s)he come only if it [rains]?’/‘Does it have to [rain] for her/him to come?’

The two translations of this sentence again reflect the two possibilities of relative subordination in English depending on whether an *only-if*-construction (without a modal) is chosen, or a purposive construction. The crucial feature of (34) is its sentence-final question marker *ma*. It marks the whole utterance as a yes/no-question. The question marker *ma* takes widest scope, and it always forms a constituent with the highest proposition in the syntactic structure. If this is so, we can be sure that *cái*-sentences as in (33) and (34) with the problematic modals have basically the same syntactic structure as the usual ‘only-if’-sentences exemplified by (32). The highest proposition in (34) must thus be the whole utterance minus *ma*, with the additional embedded proposition (*bìxū xià yǔ*) ‘(must) fall rain’. Since I know of no syntactic phenomenon that would show *ma* and *bìxū xià yǔ* to be an underlying constituent, I will take it for granted that the main clause analysis for the predicates following *cái* holds generally.

In Hole (2004: 251–253) I review some possible methods of getting a handle on the apparent mismatch of syntax and semantics in (32) or (33), and the interested reader is referred to those pages. In the context of our present investigation with an emphasis on VP’s as restrictors in non-canonical quantificational structures we can move on straight to the analysis that, I think, fits the data best. As anticipated in §2, the main clauses in (33) and (34) may be analyzed as restrictors of modal structures. They characterize the accessibility relations, or the circumstantial ordering sources, of those possible worlds in the totality of which the embedded propositions hold. ‘Are all the worlds in which (s)he comes such that it rains in them?’, this is the spell-out of the modal quantificational structure of (34), and (33) reads as ‘All the possible worlds which are such that he can apply for a visa in them are such that he goes to the em-

bassy in them’. This analysis has already been given in §2, but now we are able to see more clearly how this analysis integrates into the larger picture. We understand now that the facts of syntactic subordination don’t matter in terms of scope, because the embedded clause and the embedding clause belong to a single modal structure, the one spanned by the necessity operator in the subordinate clause. Put differently: Restrictors need not be in the c-command domain of their operator, and this is how the necessity modals in (33) and (34) can still take sentential scope: The restrictor main clauses don’t count in terms of scope.

We have to clarify a last issue. What is the connection between modality marking and focus-background marking in sentences like (33) and (34)? Recall that the point brought home from §3 has been that *cái* marks backgrounds, with information-structural backgrounds belonging in the restrictors of focus-quantificational structures. In this section we’re dealing with the *cái*-predications as restrictors of modal quantificational structures. How does this fit together? Let’s assume for the sake of the argument that the focus of (35), the asserted variant of (34), comprises the whole subordinate proposition (the argument also goes through with smaller portions in focus, but for ease of exposition the maximum focus is chosen).

- (35) Tā bixū [xià yǔ] cái lái.  
 (s)he must fall rain CAI come  
 ‘(S)he only comes if [it rains].’/‘It has to [rain] for her/him to come.’/‘It must [rain] if (s)he is to come.’

The modal signals universal quantification over possible worlds: All the possible worlds in which (s)he comes are worlds in which it rains. *Cái* agrees with a preceding focus that is interpreted as excluding all alternatives: No possible world from the complement of the possible worlds in which it rains is such that (s)he comes in those worlds. Put differently: Rain is a necessary condition of his/her coming and –disregarding causal components – his/her coming is a sufficient condition of rainy weather. *Cái* and necessity are a perfect match in this construction. Note that *cái* is entirely inert in terms of focus semantics, because the focus within the scope of the embedded modal of necessity will get the *only*-reading as a result of the modal semantics. It just serves the function – and this constitutes the major insight that I hope to defend in the present section – of providing a syntactic slot for *ad-hoc* modal restrictors or ordering sources, modal restrictors that are custom-tailored to context. To be sure, languages like English have means to express modal restrictors, as well, but there is a difference. The non-parenthesized parts of (*You must study hard*) to pass the entrance examination or *If you want to improve your health (you should exercise more)* likewise express *ad-hoc* modal restrictors. The difference in Mandarin is that there is a special construction to express such *ad-hoc* modal restrictors, while the English constructions have a broader range of application. One more agreement particle of those reviewed in the present paper occurs in the ‘*ad-hoc* modal restrictor construction’. (36) is an example with *jiù*.

- (36) [Lǎo Wáng zhǐ-yào qù dàshǐguǎn] jiù néng shēnqǐng qiānzhèng.  
 Old Wang only-must go embassy JIU can apply.for visa  
 ‘[Old Wang only has to go to the embassy] to be able to apply for a visa.’/  
 ‘If [Old Wang goes to the embassy], he can apply for a visa.’

Again we have a necessity modal, prefixed by focus-marking *zhǐ-*, in a subordinate clause, and a main clause restrictor behind *jiù*. In fact, the construction with *zhǐyào...jiù* is often taken to be a direct translational equivalent of English *if...then*-conditionals (alongside the more usual *rúguǒ* ‘if’-conditionals). But the assimilation of these two constructions is precipitate: The modal in the subordinate clause is clearly felt to be active by Mandarin speakers, whereas in an *if...then*-translation, the modal is lost, or else the meaning changes in a distorting way as

with the sentences above: ‘If Old Wang only has to go to the embassy he can apply for a visa’.

In §2, *jiù* was claimed to relate to preceding foci or contrastive topics of the  $\neg\forall$ -kind: Not all alternatives are true. How can this be matched with ‘only’ + necessity? In terms of paraphrases, the answer seems simple: If Old Wang only has to go to the embassy to be able to apply for a visa, then some other action may also yield the same result (say, sending all the required materials by mail), but not all alternative actions will do (say, making a phone call to the embassy). What is not clear to me is how the prefixing of *zhǐ*-/‘only’ before the modal of necessity annuls the special requirement found with the necessity modals of (33) or (35), viz. that *nothing else* will do.<sup>18</sup>

A construction especially designed to express *ad-hoc* modal restrictors may be a good thing to have, but something better is yet to come: a construction expressing *conventionalized* modal restrictors or ordering sources irrespective of modal force. This is the last empirical sub-domain that we will review in this paper, and it will hopefully serve to plausibilize further the idea that main clause predicates in Mandarin are a conventionalized position for restrictors in non-canonical quantificational structures.

### 5. Non-canonical structures III: Conventionalized main clause modal restrictors

(37) is an instance of a sentence with a conventionalized modal ordering source in the root-VP.

(37) [Nǐmen yīnggāi jiào wǒ ‘āyí’] cái duì!  
you should call I aunt CAI correct  
‘[You should really call me “Auntie”]!’/‘Be good kids and [call me “Auntie”]!’

(37) is from a radio play in which a female crook tries to win the confidence of two children from whose mother she’s going to steal a diamond ring in the course of the story to follow (New Radio Plays: 2). This sentence may look like any of the sentences discussed in the preceding section: If the main clause predicate *duì* ‘be correct’ is to be rendered by an English main clause predicate, the translation comes out as *Only if you should call me ‘Auntie’ is it correct*, and, again, the subordinate modal would be in the way. We could thus opt for an analysis as in §4, and this would give us a quantificational paraphrase as in (38).

(38) All the possible worlds which are such that they are very similar to the worlds in which everything is correct are such that you call me ‘Auntie’ in them.

The problem with this paraphrase is that the restrictor predicate *duì*, the literal meaning of which is ‘correct’, does not mean ‘correct’ in this context. It belongs to a set of five predicates that may be used in this construction and that have acquired a conventionalized meaning. If my analysis is right, *duì* is a marker of a moral ordering source, an ordering source that ranks possible worlds according to how fully everything in them conforms to standards of social interaction. In the English translations of (37) I tried to capture this component of meaning by the use of *really* and *Be good kids and ...*. The special status of this construction with conventionalized markers of the ordering source is evinced further by the following facts: (i) nothing may intervene between the agreement particle (*cái* in (37)) and the following predicate; in other complex *cái*-sentences, negation markers, adverbial material and some other things may occur in this position; (ii) nothing may intervene between the right edge of the subordinate

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<sup>18</sup> This problem will probably not boil down to another version of the converseness problem associated with the relationship between *if*-conditionals and *only-if*-conditionals. For the discussion of this problem see, again, von Stechow (1994, 1997) or Hole (2004: 129–138).

clause (*āyí* in (37)) and the agreement particle; typically this is a possible subject position (for more details see Hole 2004: 260). The maximum structure for sentences with “sentential endings” expressing the modal ordering source is given in (39) (PRT stands for the sentence-final particles that are frequently used in Mandarin; they don’t matter here).

$$(39) \quad \text{clause} + \left\{ \begin{array}{l} c\acute{a}i \\ j\grave{i}u \end{array} \right\} + \left\{ \begin{array}{l} sh\grave{i} \\ h\check{a}o \\ x\acute{i}ng \\ k\check{e}y\check{i} \\ du\grave{i} \end{array} \right\} + \text{PRT}$$

Continuing with the second marker whose associated ordering source appears fairly clear, let us turn to *hǎo*. *Hǎo* ‘(lit.:) good’, marks a bouletic or optative ordering source. An example is given in (40).

- (40) [Nǐ zhīdao] jiù hǎo le!  
 you know JIU good PRT  
 ‘I’m glad [you know it]!’/‘I wish [you knew it]!’/‘I wish [you’d known it]!’

The interesting thing about this example is that it easily accomodates realis and irrealis contexts, and this leads to the drastic differences in the English translations. However, both *glad* and *wish* have a component of meaning that relates to the speaker’s hopes or desires, which have come true in the first translation. If we want to retain our analysis which says that the predicates following *jiù* are just markers of the ordering source, but have themselves no modal force of their own, we will have to posit an implicit modal operator in (40). I prefer this analysis to another which puts the operator load onto the ordering source marker, but I have to admit that, especially in sentences with *jiù*, the overt operator is often missing. Sentences with *cái* will in the overwhelming majority of cases have an uncontroversial modal verb of necessity like *yīnggāi* ‘should, must’ or *děi* ‘must’, while sentences with *jiù* display a larger diversity of modal constructions including adverbial markers of future reference, purposive constructions like *qù* + VP ‘go + to-infinitive’ or nouns of obligation like *gōngzuò* ‘work, duty’. As with the parallel facts in §4, it is not fully clear to me what the relationship of *cái* and *jiù* is on the one hand, and necessity/universal quantification and possibility/existential quantification on the other. In a future treatment of the domain at hand, the possibility should be explored that the contrast between *cái*-sentences and *jiù*-sentences with conventionalized modal ordering sources might reflect a realis/irrealis distinction such that *cái* only occurs in irrealis contexts, whereas *jiù* would be unmarked for this contrast. Despite these uncertainties, which require further scrutiny, the parallelism between the information-structural mappings and the modality mappings manifests itself perspicuously in this domain as well: The largest possible foci in sentences with conventionalized markers of the modal ordering source coincide with the nuclear scopes of the modal structures.

I tend to be confident as regards the ordering sources expressed by *hǎo* ‘optative/bouletic’ and *duì* ‘moral/standards of social interaction’. What I’m not so sure about are the other ordering sources. In Hole (2004: 263) I propose an implementational ordering source for *xíng* ‘(lit.:) be okay/work out fine’ and *kěyǐ* ‘(lit.:) be possible/allowed’, and it seems that this ordering source always relates to the requirements of certain schemas of conventional actions, such as buying and selling, or negotiating some provision of a service. The last ordering source marker, *shì* ‘(lit.:) be right’, is the one I know least about, and I will refrain from speculating about its possibly purposive ordering source here.

## 6. Conclusions

We have reviewed three constructions from Mandarin that display an anti-Diesing effect: Restrictors are mapped to the VP. If the analysis that has led to this result is correct, we are faced with a more general question: Precisely what does it mean if one says that the mapping of the nuclear scope to the VP is canonical, and the mapping of restrictor material to the VP non-canonical? At the present point, I have no answer to this question. Looking for one might turn out fruitful.

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