

VERB GAPPING AND VP ELLIPSIS IN CHINESE*

Waltraud PAUL

Centre de Recherches linguistiques sur l'Asie Orientale
Ecole des Hautes Etudes en Sciences Sociales Centre National de la Recherche Scientifique

1. Introduction

There seems to be quite a consensus about the fact that Chinese, contrary to other languages like English, French etc. lacks the functional projection *Agreement Phrase*. Many scholars within the field of Chinese linguistics go a step further and take this as evidence for the non-existence of any overt movement of the verb to a higher functional category (cf. Huang 1993b, Tsai 1994).¹ The only movement allowed for the verb is that within an (extended) VP-shell (cf. Larson 1988), i.e. to empty V^0 -positions. This assumption seems to get support from Johnson(1994) who analyses verb gapping in English as "across-the-board" movement of the verb to the functional head *Tense*⁰ rather than as an instance of deletion or ellipsis of the verb. On the basis of this analysis then, the alleged impossibility for the verb of moving to a position outside the VP is correlated with the apparent lack of verb gapping in Chinese.

In the present article, we will argue against this view and show that:

- 1) the examples provided as evidence for the lack of verb gapping in Chinese are insufficient, i.e. they do not represent the whole array of data to be taken into account for this issue;
- 2) there are verbless sentences in Chinese which have to be analysed as cases of verb gapping;
- 3) the movement of the verb to a functional category in overt syntax implied by Johnson's analysis exists in Chinese as well and cannot only be observed in verb gapping, but also in VP ellipsis;

* I would like to thank Kyle Johnson for discussion and comments, and Che Huiwen, Feng Shengli, Li Xiaoguang and Tsai Mei-chih for help with the data. Any errors or misinterpretations remain my responsibility.

¹ Tsai(1994: 222) excludes this movement even for the level of *Logical Form* and bases this statement upon the lack of Case resistance effects in Chinese and the impossibility for Chinese subject indefinites to reconstruct at LF in order to benefit from \exists -closure (p. 218). As will be shown in the following, the conclusion from the lack of an AgrP projection to the lack of verb movement to a functional category above VP in Chinese is much too hasty.

4) consequently, the functional category dominating VP in Chinese can be lexically filled, i.e. it can be occupied by the verb and it is not correct to state that it remains always phonologically empty (as Ernst 1994 does).

2. Verb Gapping

2.1. *The data*

It is true that the Chinese equivalents of the standard verb gapping examples are unacceptable in Chinese:

- (1) Wo xihuan mao, ni *(xihuan) gou²
 1SG like cat 2SG like dog
 'I like cats, and you (like) dogs.'
- (2) Nanren chi mi, beiren *(chi) mian
 southerner eat rice northerner eat noodles
 'Southerners eat rice, and northerners (eat) noodles.'

But to conclude from the unacceptability of sentences like (1) and (2) to the statement that Chinese disallows verb gapping (a conclusion with rather far-reaching theoretical consequences) as for example Tsai(1994: 220-221) does on the basis of the unacceptability illustrated in (2), is much too hasty and does not do justice to the situation in Chinese. For as already pointed out by Li Meidu(1988), sentences where the object is a quantified NP rather than a bare noun do allow for the omission of the verb:³

² The following abbreviations are used in glossing examples: CL classifier; EXP experiential aspect; NEG negation; PERF perfective aspect; PL plural (e.g. 3PL = 3rd person plural); SG singular; SUB subordinator.

³ In fact, sometimes the verb may also be gapped in the presence of a modified or a generic NP (cf. (ii) - (iv) vs. (i)). Consequently, the surface filter: *N° Ø N° postulated by Li(1988: 97) which excludes the juxtaposition of bare nouns as the result of gapping does not correctly cover the data, either:

- (i) *Wo ai deguoren/mao/hongse-de hua, ta meiguoren/ma/ lanse-de hua
 1SG love German /cat/ red -SUB flower 3SG American /horse/blue -SUB flower
 'I like /Germans/cats/red flowers, and he Americans/horses/blue flowers.'
- (ii) ??Zhangsan xihuan gao-de / hong toufa-de nühai, Lisi ai -de / hei toufa -de nühai
 Zhangsan like tall-SUB / red hair -SUB girl Lisi short-SUB / black hair -SUB girl
 'Zhangsan likes tall girls/girls with red hair, and Lisi short girls/ girls with black hair.'
- (iii) ?Wo he cha, ta kafei (iv) ?Wo chi niurou, ta zhurou
 1SG drink tea 3SG coffee 1SG eat beef 3SG pork
 'I drink tea, and he coffee.' 'I eat beef, and he pork.'

- (3) Ta chi-le liang-wan fan, wo liang-wan zhou
 3SG eat-PERF 2 -bowl rice 1SG 2 -bowl gruel
 'He ate two bowls of rice, and I two bowls of gruel.'
- (4) Wo you san-bu qiche, ta san-liang zixingche
 1SG have 3 -CL car 3SG 3 -CL bicycle
 'I have three cars, and he three bicycles.'
- (5) Wo qing -le wu-ge xuesheng, ta wu-ge tongxue
 1SG invite-PERF 5 -CL student 3SG 5 -CL class-mate
 'I invited five students, and he five class-mates.'
- (6) You liang-jian cesuo; ni jin zhei-jian, wo nei-jian
 have 2 -CL toilet 2SG enter this-CL 1SG that-CL
 'There are two toilets; you go into this one, and I into that one.'

As shown in Paul(1994), the same phenomenon can be observed in the presence of complements of duration or frequency which - like objects - occupy the postverbal position:

- (7) Ta lai -guo wu-ci , wo yi-ci
 3SG come-EXP 5 -time 1SG 1 -time
 'He has been here five times, and I once.'
- (8) Ta xue -le yi-nian, wo san-nian
 3SG learn-PERF 1 -year 1SG 3 -year
 'He studied for one year, and I for three years.'

Furthermore, the verb may also be gapped in the presence of an NP like *san-ci lü* '3-times donkey' where the temporal complement *san-ci* '3-times' appears as a (pseudo) quantifier of the direct object:

- (9) Wo qi -guo san-ci ma , ta san-ci lü
 1SG ride-EXP 3 -time horse 3SG 3 -time donkey

shei shuo women mei qi -guo!
 who say 1PL NEG ride-EXP

'I have ridden on a horse 3 times, and he 3 times on a donkey; who dares to say we have never done that before!'

(For an attempt to explain the connection between the nature of the object NP and the possibility of verb gapping, which cannot be discussed here, cf. Paul 1994.) Since the best acceptability results are obtained with quantified NPs, the verb gapping examples used in this article will be exclusively of that type.

- (10) women jintian xiawu dou mangde xie dongxi:
1PL today afternoon all busy write thing

wo xie -le san-ge xiaoshi-de wenzhang, ta san-ge xiaoshi-de baogao
1SG write-PERF 3 -CL hour -SUB article 3SG 3 -CL hour -SUB report

'This afternoon, we both have been very busy writing up things: I have written an article for three hours, and he for three hours a report.'

The acceptability of (9) and (10) for at least part of the native speakers provides evidence for an underlying verb in the second conjunct. For the restructuring of the temporal complement as an apparent quantifier of the direct object illustrated here is only possible within a verbal projection. Hence the unacceptability of an NP like *san-ge xiaoshi de wenzhang* anywhere else (e.g. in subject position), even if the immediately preceding linguistic context clearly indicates the temporal complement function of *san-ge xiaoshi* (cf. Paul 1988: ch. 6.1.):

- (11a) Ta xie -le [san-ge xiaoshi-de wenzhang]
3SG write-PERF 3 -CL hour -SUB article
'He wrote an article for three hours.'

- (11b) *[san-ge xiaoshi-de wenzhang] bu gou
3 -CL hour -SUB article NEG enough
'(An article of three hours is not enough.)'

In this section, we have extended the data basis and shown that contrary to the current opinion, verb gapping is possible in Chinese. It is, however, much more restricted than verb gapping e.g. in English.

In particular, it is only possible in a coordination with 'and', which in Chinese is expressed by the simple juxtaposition of the two clauses without any overt marking. In the case of 'or', an overt conjunction *haishi* is used, and verb gapping is completely ruled out then.

Furthermore, verb gapping is observed in the spoken language only, and it necessitates a maximum parallelism, i.e. a minimal contrast between the remnants.

Last, but not least the acceptability judgements show a certain degree of variation: among the native speakers consulted, those from North-East China only accept examples of the type illustrated in (7)-(8) with temporal complements, while speakers from regions further south (Jiangsu province and Taiwan) also judge sentences like (3)-(6) grammatical.⁴ The second group is again divided into those

⁴ If Ernst(1995) is right in claiming that - like arguments - complements of duration or frequency need Case, then the fact that some speakers only accept verb gapping in the presence of temporal complements cannot be interpreted as an instance of an argument/adjunct asymmetry. This is in fact the expected result, for temporal complements are the only type of "adjunct" which - like direct objects - must appear in postverbal position, and in that respect they behave like arguments (cf. Huang 1991 (class lectures, Linguistic Institute at Santa Cruz) who for this reason calls them *argumentals*).

who accept examples like (9)-(10) (with a temporal complement appearing as a pseudo-quantifier of the direct object), and those who refuse them.

Though the data are somewhat heterogeneous, we think that they are nevertheless too important to be dismissed. We might speculate that the unstability of the data is indicative of ongoing changes in Chinese syntax.

2.2 Verb Gapping as ATB movement (Johnson 1994)

In a recent paper, Johnson(1994) has argued that an analysis in terms of "across-the board (ATB)" verb movement is able to capture all the constraints observed in verb gapping structures. We will very briefly present some of the main points of his analysis which are important for our proposal here.

According to Johnson, a sentence with a gapped verb like *Southerners eat rice, and Northerners noodles* in fact involves the coordination of VPs rather than that of sentences. Both verbs have raised in an ATB fashion to a functional head (i.e. to *Tense*^o in English), and the subject of the first conjunct moves to the specifier of *Agreement Phrase*. This movement of the subject does not violate the Coordinate Structure Constraint, for the CSC only excludes *A-bar* movement of a constituent from one of the two conjuncts; but not the *A*-movement of a constituent out of the first conjunct. The constituents that "gap", i.e. the constituents which the verb leaves when raising in an ATB fashion, are V-bars. Johnson (p. 25, (60)) concludes that Gapping licenses movement operations otherwise restricted to *Logical Form*, because in English verb-to-*Tense*^o movement normally occurs at LF only.

The fact that what is conjoined are not sentences, but VPs predicts that no constituents which are supposed to be in a position higher than VP should be able to occur in the second conjunct. As Johnson(p. 47) points out, this explains Jackendoff's(1971) observation that sentence-level adverbs are excluded from the conjunct housing the gap:

(12) Simon quickly dropped the gold, and Jack (*suddenly) the diamonds.

(13) Max sometimes beats his wife, and Ted (*frequently) his dog.
(Jackendoff 1971: 23)

The same phenomenon can be observed in Chinese:

(14a) *Laowang jianjiande tuoxia yi-jian yifu , Laoli turande yi-ge xiezi
Laowang gradually take:off 1 -CL clothes Laoli suddenly 1 -CL shoe
(*'Laowang gradually took off one garment, and Laoli suddenly a shoe.')

(14b) Laowang jianjian-de tuoxia yi-jian yifu , Laoli yi-ge xiezi
Laowang gradually-DE take:off 1 -CL clothes Laoli 1 -CL shoe
'Laowang gradually took off one garment, and Laoli a shoe.'
(slightly modified examples from Li 1988: 72)

Johnson furthermore points out that if an adverb may survive in the gapped conjunct, it must be a VP-level adverb. This prediction is borne out in Chinese by the acceptability of VP-level adverbs like *cai* 'only', *zhenghao* 'just' in the second (gapped) conjunct, which points to the existence of an underlying verbal head (Chinese adverbs in general necessitating a verbal projection to adjoin to).⁵

- (15) Ni chi-le san-wan fan, wo cai yi-wan
 2SG eat-PERF 3-bowl rice 1SG only 1-bowl
 'You have eaten three bowls of rice, and I only one.'
- (16) Ni lai -guo wu-ci, wo zhenghao yi-ci
 2SG come-EXP 5-time 1SG just 1-time
 'You have come five times, and I just once.'

Within Johnson's account, Ross'(1970) observation that gapping is possible only in directly conjoined structures receives a new significance: since ATB movement is necessarily movement to a functional projection (cf. Burton&Grimshaw 1992), it will not apply to coordinated sentences which are the complement to a lexical head:

- (17) *Lisi shuo Mali chi-le yi wan fan, Akiu shuo Huafang yi-wan zhou
 Lisi say Mary eat-PERF 1-bowl rice Akiu say Huafang 1-bowl gruel
 (*'Lisi says that Mary ate one bowl of rice, and Akiu said Huafang one bowl of gruel.')

2.3 The functional category *Inflection*^o in Chinese

The preceding discussion has provided evidence for our claim that in gapping structures in Chinese, the verb raises in an ATB fashion to a functional category.

Though there is certainly no evidence for an Agreement projection in Chinese, it is also clear that there must exist a functional category above VP whose specifier position hosts the subject NP, for as the surface order 'subject adverb verb' clearly indicates, the subject NP moves out of the VP.⁶ For our purpose here, we adopt Ernst's(1994) view that this functional category is *Inflection* bearing the features [\pm finite]. We do, however, not follow Ernst(1994) in his claim that *Infl* is always phonologically empty. Though it is correct that there is no particular morphological manifestation of *Infl* (in the sense that e.g. *-ed* is considered to be

⁵ Since verb gapping works best with quantified NPs, the range of adverbs allowed in verb gapping is limited to adverbs referring to quantity. For an extensive analysis of adverbs in Chinese, cf. Tsai Mei-chih(1995).

⁶ For evidence in favour of a (base-generated) VP-internal subject, cf. Huang(1993a).

the realization of *Tense*⁰ in English), the *Infl*-position nevertheless can be occupied by the verb, because it serves as the landing site for ATB verb movement in gapping structures.

If our analysis is correct, then it follows that adjunction of adverbs to *Infl*-bar must be possible. The opinions whether this is desirable or not diverge: Ernst(1994) rejects it, but Tang(1990) (for Chinese) and Johnson(1994) for English allow for adjunction to X-bar levels. In any case, whether the functional category serving as the landing site for the ATB moved verbs is *Infl* (with the subject in its specifier position) or rather a different functional category below it cannot be decided here. For there is no agreement at all about which functional categories should be postulated above the Chinese VP (where I abstract away from those proposals which mechanically posit a functional category for every grammatical item). The few serious studies concentrate on one or two functional categories at a time (e.g. whether negation or aspect should be analysed as heading their own projection), but they fail to check whether the interaction of these functional categories above VP gives the correct results. Accordingly, if we talk about V-to-*Infl* movement, this is to be understood as an abbreviation for movement of the verb to a higher functional category.

3. VP ellipsis

The second piece of evidence for overt V-to-*Infl* movement (and a lexically filled *Infl*-position) in Chinese goes back to an observation made by Huang(1987, 1991), but not taken up since. Huang(1991: 64) points out that in the second conjunct of a sentence like (18), a "sloppy identity" reading is also available:

- (18) Zhangsan pa ta -de baba, Lisi ye [_{Infl} pa] [_{VP} e]
 Zhangsan be:afraid 3SG-SUB father Lisi also be:afraid
 'Zhangsan_i is afraid of his father, and Lisi_j is, too.'
 [= Lisi is also afraid of his_{i/j} father]

The availability of both a strict identity reading (Zhangsan and Lisi are both afraid of the same person, i.e. Zhangsan's father) and a sloppy identity reading (each of the two boys is afraid of his own father) is typical of VP-ellipsis sentences (cf. English: John saw his mother, and Peter did, too). Assuming that the sloppy identity reading for a null-object in Chinese obtains in a context which is structurally identical to that of VP ellipsis in English, the verb must have raised out of the VP that contains the null object, thus giving rise to an empty VP. Since the verb has moved to the (otherwise empty) functional head *Infl*, *Infl* can now L-mark and properly govern this empty VP. What at first sight looks like a structure with an empty object only in fact turns out to be an instance of VP ellipsis, i.e. a VP where both the verb and the object position are empty.⁷

⁷ This not to say that every sentence with an empty object is to be analysed as an instance of VP-ellipsis.

Further evidence for an analysis of (18) in terms of VP-ellipsis is provided by the lack of a second sloppy reading, a phenomenon which would be difficult to explain under the assumption of an empty object. Huang(1991: 65) points out that in the sloppy reading for the English and the Chinese sentence, only the subject of the empty VP can serve as a binder of the pronoun, not another (higher) subject:

- (19) John saw his mother, and Mary knew that Bill did, too. (=Huang's (33))
 [=John_i saw his mother, and Mary knew that Bill_j saw his_{i/j} mother, too.'
 Not: John saw his mother, and Mary knew that Bill saw her mother.']
- (20) John kanjian-le ta -de mama , Mary zhidao Bill ye kanjian-le
 John see -PERF 3SG-SUBJ mother Mary know Bill also see -PERF
 'John saw his mother, and Mary knew that Bill did, too.'
 [same readings as in (19)] (=Huang's (34))

The availability of a sloppy reading in structures like (18) and (20) and their subsequent analysis as VP-ellipsis gets additional support from the findings of Guo et alii(1995) who show that Chinese speaking children demonstrate the competence for both the strict and the sloppy identity reading from age 3,5 years on.

Another characteristic of VP ellipsis (as set up for English by Johnson 1994: 32-37) is that the elided VP may take as antecedent a conjunction of VPs:

- (21a) Wendy is eager to sail around the world and Bruce is eager to climb the Kilimanjaro, but neither of them can [_{VP} Δ] because money is too tight.
 Δ = 'sail around the world and climb the Kilimanjaro'
 (Johnson 1994: 33)
- (21b) Xiaoli yao pa Fushishan , Xiaowang yao shang silu keshi
 Xiaoli want climb Mount:Fuji Xiaowang want go:on Silk:Road but
- yinwei qian bu gou suoyi tamen dou bu neng [_{VP} Δ]
 because money NEG enough therefore 3PL all NEG can

'Xiaoli wants to climb the Mount Fuji, and Xiaoli wants to travel on the Silk Road, but since money is too tight, neither of them can.'
 Δ = 'pa Fushishan, shang silu'

Unlike verb gapping (which is possible only in sentence juxtaposition without any overt marker), VP ellipsis in Chinese can also apply to sentences coordinated by an overt conjunction (e.g. *keshi* 'but'; cf. (14b), (15)) which is in accordance with the general view that VP ellipsis is less constrained than verb gapping:

- (22) Zhangsan piping ta -de laoshi, keshi Lisi bu piping
 Zhangsan criticize 3SG-SUB teacher but Lisi NEG criticize
 'Zhangsan criticizes his teacher, but Lisi doesn't.'

It should be clear by now that the availability of a strict and a sloppy reading together with the display of characteristics which are typical of VP ellipsis structures all confirm the analysis of sentences like (18) as an instance of VP ellipsis and thereby supports the conclusion that overt movement of the verb to a functional category is possible in Chinese.

Though this analysis might at first sight seem surprising, Otani/Whitman(1991) provide further typological evidence for it. They show that the same analysis can be applied to Japanese and Korean, both languages where verb-to-Infl movement is generally thought to occur in LF only. They examine in some detail the properties of the nominals in such VP ellipsis contexts and come up with a significant correlation which contrasts null-objects in languages like Chinese, Japanese and Korean, on the one hand, with the null objects in Romance languages. V-raising and VP ellipsis will lead to the sloppy identity interpretation only in the case of VPs that are empty in the strictest sense, i.e. VPs containing exclusively non-indexed empty categories. This is the case in Chinese, Japanese and Korean where null objects lack phi-features, but not in numerous Romance languages where null-objects are coindexed with Agreement or clitic morphology (p. 356).

4. Conclusion

We hope to have shown in this article that contrary to the current opinion expressed in the literature, verb gapping - though heavily restricted - does exist in Chinese. This is an important finding insofar as it provides evidence for overt verb-to-Infl movement in Chinese and refutes the assumption that verb movement in Chinese is confined to the VP. While there still remain several problems, the fact that similar results can be obtained for typologically related languages like Korean and Japanese seems to indicate that our approach is on the right track.

References

- Burton, Strang & Grimshaw, Jane. 1992. Coordination and VP-Internal Subjects. *Linguistic Inquiry* 23.2: 305 - 313.
- Ernst, Thomas. 1994. Functional Categories and the Chinese Infl. *Linguistics* 32, 2: 191 - 212.
- Ernst, Thomas. 1995. On Adjunct Case in Chinese. Unpublished manuscript, University of Delaware.
- Guo, F.F. / Foley, C./ Chiang, C-P./ Lust, B. 1995. Operator-Variable Binding in the Initial State: A cross-linguistic Study of VP ellipsis structures in Chinese and English. Paper presented at the Joint Meeting of ICCL-4 and NACCL-7, University of Wisconsin, Madison, June 27 - 30, 1995.
- Huang, C.-T. James. 1987. Verb-second in German and some AUX Phenomena in Chinese. in: Bramkamp, A. et al. (eds.). *Chinese-Western Encounter: Festschrift for Franz Gier, SVD on his 85th Birthday*. Taipei: Fu Jen University.
- Huang, C.-T. James. 1991. Remarks on the Status of the Null Subject. in: Freidin, Robert (ed.). 1991. *Principles and Parameters in Comparative Grammar*. Cambridge, Mass: MIT Press; pp. 56 - 76.
- Huang, C.-T. James. 1993a. Reconstruction and the Structure of VP: some theoretical consequences. *Linguistic Inquiry* 24: 103 - 138.
- Huang, C.-T. James. 1993b. Verb Movement and some Syntax-Semantics Mismatches in Chinese. Unpublished manuscript, University of California at Irvine.
- Jackendoff, Ray. 1971. Gapping and Related Rules. *Linguistic Inquiry* 2, 1: 21 - 35.
- Johnson, Kyle. 1994. Bridging the Gap. Unpublished manuscript, University of Massachusetts-Amherst.
- Larson, Richard. 1988. On the Double Object Construction. *Linguistic Inquiry* 19, 3: 335 - 392.
- Li, Mei-Du. 1988. *Anaphoric Structures in Chinese*. Taipei: Student Book Co.
- Otani, Kazuyo & Whitman, John. 1991. V-Raising and VP-Ellipsis. *Linguistic Inquiry* 22, 2: 345 - 358.
- Paul, Waltraud. 1988. *The Syntax of Verb-Object Phrases in Chinese: Constraints and Reanalysis*. Paris: Langages Croisés.
- Paul, Waltraud. 1994. L'omission du verbe existe-t-elle en chinois? *Cahiers de Linguistique - Asie Orientale* 23: 255 - 264.
- Ross, John R. 1970. Gapping and the Order of Constituents. in: Bierwisch, Manfred & Heidolph, Karl-Erich (eds.). *Progress in Linguistics*. The Hague: Mouton.
- Tang, Chih-Chen Jane. 1990. *Chinese Phrase Structure and the extended X-bar Theory*. Doctoral dissertation, Cornell University.
- Tsai, Mei-chih. 1995. *La modification adverbiale et l'ordre des mots en chinois*. Doctoral dissertation, University Paris 7.
- Tsai, Wei-Tian Dylan. 1994. *On Economizing the Theory of A-bar Dependencies*. Doctoral dissertation, MIT.