The grammaticalization of Chinese *ba*: grammaticalization, ‘lateral’
grammaticalization and case theory

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‘Lateral’ grammaticalization (Chinese *de* and *shi*) is similar to yet different from
grammaticalization in Minimalism, since while both involve ‘structural
simplification’, the latter displays ‘phonological weakening’, ‘univerbation’ and
‘semantic bleaching’ while the former does not (Tse (2013a, b)). There is another
functional category which is not analysed in Roberts and Roussou’s (2003)
Minimalist account of grammaticalization, namely K(case), which is postulated
to represent morphological case (van Kemenade and Vincent (1997:18-21)). An
analysis of case-markers (K) in Chinese (*ba*) suggests that they are ‘laterally’
grammaticalized, which is significant for Chinese and modern case theory since
it entails that K(case) is not universal and cannot be equated with abstract case.

1.1. Grammaticalization and Minimalism

Roberts and Roussou (R & R) (2003) and van Gelderen (2011) argue that
grammaticalization is a natural type of change that occurs cross-linguistically, since they
argue that grammaticalization always leads to ‘simpler’ structures which are favoured in
(2003:201) define ‘simplicity’ as the reduction of ‘feature syncretisms’, which are ‘the
presence of more than one formal feature in a given structural position: H [+F, +G…]’,
while van Gelderen (2011:16-17) argues that uninterpretable features are ‘simpler’ than
interpretable ones. R & R (2003:198-199) discover three types of grammaticalization:

1) [XP Y + X [YP…tY…]] > [XP Y=X [YP…Y…]]

2) [XP X_F… [YP…Y_F…]] > [XP X_F… [YP…Y…]]

3) [XP Y_P X … [ … tYP … ]] > [XP Y=X … [ … ]]

In 1) and 3), there is loss of movement (Y…tY, YP…tYP) and the grammaticalized item
(Y) is shifted upwards (Y=X), while in 2) there is loss of agreement (X_F…Y_F) and
features are shifted upwards to the grammaticalized item (X_F). R & R (2003:200)
therefore argue that grammaticalization is essentially an ‘upward shift of features’:

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1 This is a modification to Lightfoot (1999) who argues that language evolution is ‘random’ when
grammaticalization is a strong cross-linguistic trend (Heine and Kuteva (2002)). ‘Simplicity’ is
crucial towards understanding the cross-linguistic distribution of grammaticalization.
Roberts (2010:50-51) generalises between Move (1, 3)) and Agree (2)) by arguing that both consist of probe and goal features, and so I argue that grammaticalization is an upward shift of goal features due to the loss of probe features (Tse (2013b:99)).

1.2. ‘Lateral’ grammaticalization and Minimalism: Chinese de and shi

Simpson & Wu (S & W) (2002) and Wu (2004) analyse Chinese shi-de constructions in northern Mandarin dialects, which display the following alternation:

5) wo shi zuotian mai piao de
   I be yesterday buy ticket DE

6) wo shi zuotian mai de piao
   I be yesterday buy DE ticket

‘It was yesterday that I bought the ticket.’ (S & W (2002:169), Wu (2004:120))

S & W (2002:171) and Wu (2004:122) argue that 6) is derived from 5) since 5) is attested earlier than 6) and 6) only occurs in certain dialects while 5) is pan-Chinese. One is therefore investigating why de has been preposed from sentence-final position (5)) to being a verbal suffix (6)) (S & W (2002:171-175, 190-191), Wu (2004:122-125)). In 5), S & W (2002:180-189) and Wu (2004:132-140) analyse zuotian mai piao ‘to buy ticket yesterday’ as a relative clause that is part of a complex noun phrase headed by de (D):

S & W (2002:175-177) and Wu (2004:125-127) argue that shi-de constructions often imply that the action of the embedded clause (here zuotian mai piao ‘to buy ticket yesterday’) has already occurred, and so past tense is implied and de can be re-analysed as a past tense marker (S & W (2002:190), Wu (2004:141)). This is especially apparent when de is suffixed to the verb (6)), in which case the embedded clause obligatorily refers to the past (S & W (2002:174-177, 190-197), Wu (2004:126-127, 141-146)):

Cf Chinese completive suffix -le, which is derived from sentence-final liao (Wu (2004:200ff)).
6) is ‘simpler’ than 5), since de as a determiner (D) has an Agree relation ([u-N]) with its (empty) nominal complement (N), but as a past tense marker (T) this Agree is lost. Furthermore, while de as a determiner (D) holds interpretable phi-features ([i-phi]), as a past tense marker it holds uninterpretable ones ([u-phi]) which agree with the subject of the relative clause. The fact that de conforms to R & R’s and van Gelderen’s ‘simplicity’ is supported by the cross-linguistic distribution of D-to-T re-analysis (see footnote 1) (S & W (2002:200-202), Wu (2004:149-153)) e.g. determiners (D) > copula verbs (T):

7) qian li er jian wang
thousand mile then see king
shi wo suo yu ye
this I NOMINALISER desire DECLARATIVE.PARTICLE
‘To see the king after travelling a thousand miles, this (is) what I want.’ (7a)
‘To see the king after travelling a thousand miles is what I want.’ (7b)
(Mencius, 4th century BC)

7a) is the original equational construction where shi ‘this’ is a demonstrative pronoun in subject position (SpecT) and is in apposition with the topic (qian li er jian wang ‘to see the king after travelling a thousand miles’) and the predicate (wo suo yu ye ‘what I want’) (Li and Thompson (1977:420), van Gelderen (2011:130), Feng (1993:284-285, 2003:31-33)). The three nominal constituents have interpretable phi-features ([i-phi]) and there is an Agree relation between them. Furthermore, as shi is a determiner, it holds [u-N]:

\[ \text{shi} \quad \text{is synchronically attested with nominal complements (Li and Thompson (1977:422-423))} \]

E.g. zì yù shì rì ku
Confucius at this day cry
‘Confucius cried on this day (shi rì).’ (Analect, 5th century BC)
As identity is implied, *shi* can be re-analysed as a copula verb (T) linking the two (7b) (Li and Thompson (1976:424-427), van Gelderen (2011:129-131), Feng (2003:30-35)):  

7b) is ‘simpler’ than 7a), since the *Agree* relation between the three nominal constituents and that (\([u-N]\)) between *shi* (D) and its nominal complement (\([i-N]\)) are lost. Furthermore, the original interpretable phi-features of *shi* (\([i-\phi]\)) become uninterpretable (\([u-\phi]\)), since as a copula verb (T) *shi* agrees with the new subject (*qian li er jian wang*). All this is apparent in later examples where *shi* cannot be analysed as a determiner (D) and must be re-analysed as a copula verb (T) e.g. when it is used with another determiner (Li and Thompson (1976:425-426), van Gelderen (2011:133-134)):  

8) *ci shi xiao er*

   This be small child

   ‘This is a small child.’ (Buddha’s saying in late Han, 25-220AD) 

\[4\] In generative syntax, topics are on the left-periphery of the complementiser layer (Rizzi (1997:188)).  
\[5\] Li and Thompson (1977:436) argue that copula verbs are often omissible and are often used only to bear tense. Bowers (2001:302ff) proposes that copula verbs occupy a functional category called Pred(icate), which is structurally very similar to T.
However, neither *de* nor *shi* display R & R’s ‘upward feature analysis’ (4), since they hold T features [(i-T)] that are not upwardly shifted but inferred from pragmatics, namely the tendency for *shi-de* constructions to imply that the embedded action has already occurred (5, 6)) and the implied identity in equational constructions (7a-b)).

1.3. Grammaticalization and ‘lateral’ grammaticalization

While grammaticalization regularly displays ‘phonological weakening’, ‘univerbation’ and ‘semantic bleaching’ (Tse (2013a:section 3)), ‘lateral’ grammaticalization does not seem to display them: Chinese *de* is toneless both as a determiner (5)) and as a past tense suffix (6)) with no perceptible phonetic difference (S & W (2002:173-174, 186, 190-194), Wu (2004:123-124, 138-139, 142-144)).

There is no evidence for copula verbs derived from determiners (7)) undergoing ‘phonological weakening’ or ‘univerbation’ either. Furthermore, although Chinese *de* and *shi* undergo featural ‘simplicity’, they also gain interpretable features ([i-T]) from pragmatics and hence cannot be said to undergo ‘semantic bleaching’. I argue that ‘upward feature analysis’ in grammaticalization causes ‘phonological weakening’/’univerbation’ while the loss of probe features constitutes ‘semantic bleaching’ (Tse (2013a:section 3.4, 2013b:section 4)).

All this occurs in Chinese too e.g. resultative constructions (*liao* > *le*):

9) Zixu jie meng liao
   Zixu interpret dream finish
   ‘After his interpretation of the dream finished…’ (9a)
   ‘After he interpreted the dream…’ (9b)

Transformation Texts, 10th century AD

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6 This ties in with Feng’s (1993:288ff, 2003:32-35) argument that in equational constructions (7a) there is a prosodic gap (Ø) between the subject (*shi*) and the predicate (*wo suo yu ye*) which is subsequently filled when *shi* is re-analysed as a copula verb (T). *shi* is therefore filling an empty syntactic position (T) and is holding features ([i-T]) that are not in the original cue.

7 Chinese *de* as a past tense suffix (T) is more ‘univerbated’ than as a determiner (D), since the latter is a clausal clitic (*zuotian mai piao-de*, ex. 5)) while the former is a verbal suffix (*mai-de*, ex. 6)) (S & W (2002:173-175, 190-191), Wu (2004:125-126, 142, 161, 204)). However, *de* is phonetically identical (toneless) in 5) and 6) and the affixal status of *de* in 6) coincides with the fact that verbal suffixes marking tense/aspect (T) are typically attached to the verb in Chinese and cross-linguistically (Wu (2004:204-205)) (cf Chinese –*le* (see footnote 2)). Wu (2004:234-236) also argues that *liao* is ‘unverbated’ as a verbal suffix before undergoing ‘phonological weakening’ (> –*le*). ‘Univerbation’ need not entail ‘phonological weakening’ (Wu (2004:201ff)).

8 Chinese *shi* is still toned (tone 4) in modern Mandarin. See Tse (2013b:107 footnote 10) for more examples of copula verbs which do not display ‘phonological weakening’ or ‘univerbation’.

9 E.g. Latin/Romance *habere* (V) > clitic (Mod obligation/necessity) > affix (T(future)); English *have to* (V) > *hafta* (Mod obligation/necessity) > *shall* [ʃəɬ] / [ʃɬ] (T(future)) (Tse (2013a:sections 3.2, 3.4)). These correspond to Cinque’s (1999) hierarchy (T-Mod-V).

10 *liao* here corresponds to –*le* in modern Mandarin (Shi (1989:100)):
Chinese liao is originally a lexical verb ‘to finish’ (9a)\(^{11}\) (Shi (1989:100-102)), and as such it undergoes V-to-v movement (Huang (1997)):

9a)  
\[
\begin{array}{c}
\text{TP} \\
\rightarrow \\
\text{Spec} T \\
\rightarrow \\
\text{T} \\
\rightarrow \\
\text{Ø} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{liao} \\
\rightarrow \\
\text{[i-v]} \\
\rightarrow \\
\text{V} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{Zixu} \\
\rightarrow \\
\text{jie meng} \\
\rightarrow \\
\end{array}
\]

As liao denotes the end of an activity, it can be re-analysed as a completive aspectual marker in little v (9b) (Shi (1989:102-103), Wu (2004:187-188, 206-215)):

9b)  
\[
\begin{array}{c}
\text{TP} \\
\rightarrow \\
\text{Spec} T \\
\rightarrow \\
\text{T} \\
\rightarrow \\
\text{Ø} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{liao} \\
\rightarrow \\
\text{[i-v: AspCompletive]} \\
\rightarrow \\
\text{[i-V]} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{AspCompletive} \\
\rightarrow \\
\text{jie meng} \\
\rightarrow \\
\end{array}
\]

9b) is ‘simpler’ than 9a), since liao loses V-to-v Move and is upwardly shifted from V to v (Asp\textsubscript{Completive}) where its interpretable verb features ([i-V]) become uninterpretable ([u-V]). It becomes a verbal suffix to the main verb (see footnote 7) (Shi (1989:103-104)):

10)  
\[
\begin{array}{c}
\text{TP} \\
\rightarrow \\
\text{T} \\
\rightarrow \\
\text{Ø} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{AspCompletive} \\
\rightarrow \\
\text{huai-le} \\
\rightarrow \\
\text{[i-v]} \\
\rightarrow \\
\text{V} \\
\rightarrow \\
\text{[u-V]} \\
\rightarrow \\
\text{yi sheng} \\
\rightarrow \\
\end{array}
\]

‘… you have ruined your entire life.’ (\textit{Zhuxi’s quotations}, 12\textsuperscript{th} century AD)

10)  
\[
\begin{array}{c}
\text{TP} \\
\rightarrow \\
\text{T} \\
\rightarrow \\
\text{Ø} \\
\rightarrow \\
\text{VP} \\
\rightarrow \\
\text{AspCompletive} \\
\rightarrow \\
\text{huai-le} \\
\rightarrow \\
\text{[i-v]} \\
\rightarrow \\
\text{V} \\
\rightarrow \\
\text{[u-V]} \\
\rightarrow \\
\text{yi sheng} \\
\rightarrow \\
\end{array}
\]

‘Zixu interpreted the dream.’

\(^{11}\) E.g. wei ke he shi liao
be guest what time finish
‘When can I stop being a guest?’ (Tang Dynasty, 618-907 AD) (Shi (1989:99))
liao displays ‘upward feature analysis’ (V > Asp) as well as ‘phonological weakening’, ‘univerbation’ and ‘semantic bleaching’. All this is a contrast to Chinese de and shi.\textsuperscript{12}

2.1. K(case)

K(case) was proposed as a functional category by Lamontagne and Travis (L & T) (1986, 1987, 1992), who note that when nominal complements are adjacent to their head predicates, their morphological case-endings can be optionally dropped (11a)), but when they are not adjacent, their morphological case-endings are obligatory (11b)) e.g. Japanese (L & T (1986:54, 1987:174, 1992:158)):

\begin{align}
11a) & \text{John-ga dare(-wo) nagutta no?} \\
& \text{John-NOM who-ACC hit Q}
11b) & \text{dare*(-wo) John-ga nagutta no?} \\
& \text{who-ACC John-NOM hit Q}
\end{align}

‘Who did John hit?’

This resembles other functional categories e.g. complementisers, which are also omissible only when they are adjacent to their head predicates e.g. Japanese (L & T (1986:56, 1987:174, 1992:159)):

\begin{align}
12a) & \text{Mary-ga John-ni Koobe-ni iku (te) yuuteta} \\
& \text{Mary-NOM John-DAT Kobe-DIRECTIONAL go COMP was.saying}
12b) & \text{Mary-ga Koobe-ni iku *(te) John-ni yuuteta} \\
& \text{Mary-NOM Kobe-DIRECTIONAL go COMP John-DAT was.saying}
\end{align}

‘Mary said to John yesterday that she was going to Kobe.’

L & T (1986:57-58, 1987:176-177, 1992:159-161) therefore postulate a functional category for morphological case called K(case) on the left-edge of DPs (13)), just like complementisers are postulated on the left-edge of TPs (14)):

\begin{align}
13) & \text{K} \\
& \text{DP} \\
& \text{NP} \\
& \text{…}
14) & \text{CP} \\
& \text{TP} \\
& \text{VP} \\
& \text{…}
\end{align}

Van Kemenade and Vincent (1997:6-7) argue that functional categories host morphology and lexical categories move to them in order to pick it up e.g. Infl (T), which hosts verbal

\textsuperscript{12} Although Wu (2004:234-235) argues that liao is ‘univerbated’ before undergoing ‘phonological weakening’ (see footnote 7), ‘phonological weakening’ is beyond question here (liao (tone 3) > le (tone 0)) and so her argument does not contradict my argument that ‘upward feature analysis’ causes ‘phonological weakening’/‘univerbation’. ‘Phonological weakening’ and ‘univerbation’ are therefore real possibilities in Chinese, especially in ‘upward feature analysis’ (V > Asp).
morphology and causes lexical verbs to move from V to T (Chomsky (1991:421-426, 430ff, 1995:133-138)). They argue that K(case) hosts morphological case and NPs/DPs with morphological case move to K (van Kemenade and Vincent (1997:20)).

In order to account for 11-12), L & T (1986:51, 58, 1987:177, 1992:160-163) assume the ‘Empty Category Principle’ (ECP), which states that empty categories must be properly governed and proper government is defined as c-command and feature recoverability in sisterhood (L & T (1986:58-59, 1987:177, 1992:160-165)). This predicts that only KPs/CPs that are sisters (i.e. adjacent) to their head predicates can have empty heads, since only these adjacent KPs/CPs are properly governed (c-commanded and feature-checked) by their head predicates:

11a) diagram

2.2. K(case): abstract case or morphological case?

In generative grammar, there is a distinction between abstract case and morphological case: the former is postulated as a module of Universal Grammar (Chomsky (1981:5-6, 135), Haegeman (1991:141-144), Freidin, Michaels, Otero and Zubizarreta (2008:ix)), Bobaljik and Wurmbrand (2009:45)), while the latter is not universal since not all languages have it (e.g. Chinese (Huang, Li, Li (2009:31))).

L & T (1986:51-52, 1987:173, 1992:157, 166) subsume the ‘Case Filter’ under ECP (see footnote 13), which entails that K(case) is equivalent to abstract case and

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13 This is known as the ‘Case Filter’, which states that all overt nouns must have (abstract) case:

*NP if NP has phonetic content and has no abstract case (Bobaljik and Wurmbrand (2009:45))
should be universally postulated. This is an attractive hypothesis, since ECP successfully explains why nouns without morphological case (empty K) have to be adjacent to their head predicates and constitute fixed word order.\footnote{This is a typological tendency, since languages that do not have morphological case must have fixed word order, whereas languages that have morphological case can (but do not necessarily) have free word order (Stowell (1981:122), Kiparsky (1997:470)).}

However, abstract case-assignment in generative grammar is highly structural and configurational anyway, since arguments are assumed to occupy fixed positions where they can be properly governed by the head predicates, and many definitions of government employ c-command and feature-checking as well as adjacency (Stowell (1981:112-113), Haegeman (1991:77, 167-168)).\footnote{Cf Weerman (1997:441-448), who argues that the loss of morphological case in Dutch gave rise to KPs with empty K heads, which, under the influence of ECP, became adjacent to their head predicates and led to fixed word order in modern Dutch.} It is therefore possible to eliminate K for languages that do not have morphological case, since abstract case-assignment already predicts adjacency.\footnote{Cf the ‘*NP-to-VP filter’, which is identified as the precursor of the ‘Case filter’ (see footnote 13): *\(\alpha\) NP to VP, unless \(\alpha\) is \textbf{adjacent to} and in the domain of Verb or for ([\(-N\)]) (my bold) (Freidin, Michaels, Otero and Zubizarreta (2008:ix), Bobaljik and Wurmbrand (2009:45))}

Chinese has never had morphological case and so the grammaticalization of case-markers (K)\footnote{This conforms to Chomsky’s ‘Least Effort Account’, which states that shorter derivations are preferred to longer ones (Chomsky (1991:426ff, 1995:138ff))). Empty Ks are not economical.} in Chinese should yield decisive evidence as to whether K exists in Chinese in the

\begin{verbatim}
It is therefore possible to eliminate K for languages that do not have morphological case, since abstract case-assignment already predicts adjacency.\footnote{Reserving K(case) for languages that have morphological case is an attractive proposal, since it is possible to account for free word order by using K(case) (see footnote 14). Traditionally, free word order is attributed to ‘scrambling’, which can be correlated with K(case) (cf Roberts (1997), who argues that ‘scrambling’ in Old English is due to morphological case, and with the loss of morphological case, the underlying (S)V0 word order (re-)surfaces).} Chinese has never had morphological case and so the grammaticalization of case-markers (K)\footnote{Case-markers are functionally parallel to morphological case and are analysed as morphological spell-outs of K(case) (van Kemenade and Vincent (1997:18ff)).} in Chinese should yield decisive evidence as to whether K exists in Chinese in the
\end{verbatim}
first place. Space constraints prevent me from analysing all Chinese case-markers. I therefore analyse the grammaticalization of Chinese *ba*, which has received by far the most scholarly attention and may be taken as representative of Chinese case-markers (see Chappell and Peyraube (2011:787) and Huang, Li, Li (2009:153-167)).

### 3.1. Chinese case-markers (K)

In Chinese, there are alternations between placing the object after the verb (15a), (16a), (17a)) and before it where it is marked by a case-marker (15b), (16b), (17b)):

15a) ma jie
    scold street
15b) zai jiedao-shang ma ren
    be.at street-LOCALIZER scold people
   ‘Scold people on the streets.’ (Feng (2005:8))
16a) qie zhe ba dao
    cut this CLASSIFIER knife
16b) yong zhe ba dao qie rou
    use this CLASSIFIER knife cut meat
   ‘Cut meat with this knife.’ (Feng (2005:8))
17a) da guojia dui
    play country team
17b) gen guojia dui da qiu
    with country team play ball
   ‘Play ball with the national team.’ (Feng (2005:8))

Feng (2000, 2005:4, 7, 10) argues that the main verbs (*ma, qie, da*) undergo V-to-v movement in 15a), 16a) and 17a), whereas in 15b), 16b) and 17b) these deverbal case-markers (K) are merged in little v and block V-to-v movement. The same alternation is found with *ba*:

18a) Lisi sha-le na-ge huaidan
    Lisi kill-PERF that-CLASSIFIER scoundrel
18b) Lisi ba na-ge huaidan sha-le
    Lisi BA that-CLASSIFIER scoundrel kill-PERF
   ‘Lisi killed that scoundrel.’ (Huang, Li, Li (2009:153, 172))

Adopting Zou (1995:74-88), Li (2006:381-382) and Huang, Li, Li’s (2009:27-28, 166) argument that *ba* projects its own functional projection in little v, *ba* can be analysed as a case-marker (K) merged in little v (cf van Gelderen (2011:175)):

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20 All the main Chinese case-markers are listed in Chappell and Peyraube (2011).
21 These case-markers are verbs synchronically and have undergone re-analysis (*zai* ‘to be at’ > ‘at’, *yong* ‘use’ > ‘with’, *gen* ‘to follow’ > ‘with’). There are numerous typological examples of verbs being grammaticalized as case-markers (van Gelderen (2011:175ff), Chappell and Peyraube (2011:787)), and this cross-linguistic distribution is very relevant to Minimalism (see footnote 1).
A canonical *ba*-construction can therefore be represented thus:

```
19)   TP
     |   vP1
     |   vP2
     |K   Specv2
     ba   NP/DP   v2   v'2   vP   XP
     [u-D/N] [i-D/N] V
```

This structure is supported by the following constituency test:

1) `ta ba men xi-hao, chuanghu ca-ganjing-le he BA door wash-finish window wipe-clean-PERF`
   ‘He washed the door and wiped the windows clean.’

The complement of *ba* (*men* ‘door’, *chuanghu* ‘window’) and the main verbs (*xi-hao* ‘wash’, *ca-ganjing-le* ‘wipe clean’) are co-ordinated to the exclusion of *ba* (*men xihao, chuanghu caganjingle*), which suggests that they form constituents by themselves ([*ba* [NP/DP VP]]) (Li (2006:382), Huang, Li, Li (2009:166)). Furthermore, Li (2006:408-410) and Huang, Li, Li (2009:174-177) justify merging *ba* higher than little v by arguing that while adverbs can occur on either side of *ba* (2a-b)), they can only precede the main verb (2c-d)), which suggests that *ba* is merged higher than the V-to-v landing site:

```
2a)  wo xiaoxin-de ba beizi na-gei-ta
    I carefully-ADV BA cup bring-give-him

2b)  wo ba beizi xiaoxin-de na-gei-ta
    I BA cup carefully-ADV bring-give-him

2c)  wo xiaoxin-de na beizi gei-ta
    I carefully-ADV bring cup give-him

2d)  *wo na beizi xiaoxin-de gei-ta
    I bring cup carefully-ADV give-him
```
   ‘I gave the cup to him carefully.’

I therefore posit another little v node (v1) between T and little v (v2) for *ba* (cf Zou (1995:85-87), Li (2006:410-412), Huang, Li, Li (2009:176-178)).

23 Caha (2009) proposes a hierarchy of K elements, and since *ba* marks the direct object of the main verb, it is equivalent to the accusative case in other languages (K(accusative)). Zai (15b), yong (16b) and gen (17b) represent K(locative), K(instrumental) and K(comitative) respectively.
The main verb (here \textit{sha-le}) does not form a VP since it subcategorises for ([u-K]) the \textsl{baP} ([i-K]) and cannot select any other complement, even if it co-references to the complement of \textsl{ba} (Li (2006:381), Huang, Li, Li (2009:165)):

20) \texttt{*ta ba Lisi hai-le ti}
\texttt{he BA Lisi hurt-PERF him}

\texttt{‘He hurt Lisi.’}^{25}^{26}

### 3.2. The grammaticalization of Chinese \textsl{ba}

Chinese \textsl{ba} is used in serial verb constructions in medieval Chinese (Huang, Li, Li (2009:162-163), Chappell and Peyraube (2011:787ff)) where it is a lexical verb ‘to take/hold’ (Li (1990:183, 2006:379), Feng (2002:128)).^{27} The origins of \textsl{ba} as a case-

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\textsuperscript{24} \textsl{ba} holds uninterpretable verb features ([u-V]) because in recent Minimalism complements have uninterpretable Case features ([u-Case]) that have to be checked with the head (here \textit{sha-le} (V)) (Pesetsky and Torrego (2001, 2004)). This is supported by the fact that \textsl{ba} cannot be used independently without a main verb (Zou (1995:70), Li (1990:186, 2006:380)):

1) \texttt{*ba shui}
\texttt{BA water}

\textsl{ba} can also be used causatively (Zou (1995:42ff), Li (2006:378)). Huang, Li, Li (2009:168ff)):

3) \texttt{zhe-ping jiu ba ta zui-dao-le}
\texttt{this-bottle wine BA he drunk-fall-PERF}
\texttt{‘This bottle of wine made him drunk.’} (Li (2006:383))

As \textsl{ba} is not K(accusative) in 1-3), these usages will not be discussed in this paper.

\textsuperscript{27} Medieval Chinese \textsl{ba} can be used on its own and should hence be analysed as a lexical verb (cf footnote 24) e.g.

1) \texttt{zuo shou ba qi zhou}
\texttt{left hand BA his sleeve}
\texttt{‘He held his sleeve with his left hand.’} (\textit{Yan Ce}, 8\textsuperscript{th} century AD)
marker are argued to lie in examples where the second verb denotes purpose and contains an empty argument (Feng (2002:127, 132ff)) e.g. 

21) xian chang ba qin nong 
leisure often BA lute play
‘In my leisure, I often take a lute to play.’ (Ji Du Shi Yi, 8th century AD)

*ba* can be analysed as a lexical verb ‘to take/hold’:

21a) 

\[
\begin{array}{c}
\text{T}

\text{AdvP} \\
\text{xian} \\
\text{AdvP} \\
\text{T'}

\text{TP}

\text{vP1} \\
\text{Ø} \\
\text{vP2} \\
\text{v2'} \\
\text{v2'} \\
\text{v2} \\
\text{VP} \\
\text{ba} \\
\text{i} \\
\text{[i-v]} \\
\text{[u-v]} \\
\text{[u-N]} \\
\text{v1} \\
\text{Ø} \\
\text{vP2} \\
\text{v2'} \\
\text{v2'} \\
\text{v2} \\
\text{VP} \\
\text{nong j} \\
\text{[i-v]} \\
\text{[u-v]} \\
\text{[u-N]} \\
\text{[i-N]} \\
\text{[i-v]} \\
\text{[i-N]} \\
\end{array}
\]

As the argument of the second VP (*nong* Ø) is empty, there is implied coreference between the complement of *ba* (*qin* ‘lute’) and the object position of the second verb

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28 In serial verb constructions, each verb has its own argument structure and so they each undergo movement to their respective vPs (van Gelderen (2011:189-190)).

29 This serial verb structure still exists in modern Mandarin, since it is possible to prepose *ba* and its complement together, which suggests that they form a constituent (*baP*) (Huang, Li, Li (2009:178)) (cf footnote 22):

1a) ni ba zhe-kuai rou qie-qie… ba 
you BA this-CLASSIFIER meat cut-cut SFP

1b) ba zhe-kuai rou, ni xian qie-qie ba 
BA this-CLASSIFIER meat you first cut-cut SFP

‘You cut the meat and wash the vegetable.’ (Huang, Li, Li (2009:166-167))

Cf *yong* ‘to use’ (section 3.1, ex. 16):

2a) ta yong dao sha-le henduo ji 
He use knife kill-PERF many chicken

2b) yong dao ta sha-le henduo ji 
Use knife he kill-PERF many chicken

‘He killed many chicken with a knife.’ (Huang, Li, Li (2009:178-179))

Huang, Li, Li (2009:178-179) therefore argue that the preposed phrases here (*ba zhe-kuai rou, yong dao*) are VPs, which coincides with the historical example here (21a)).
(nong Ø ‘to play (something) i.e. lute’) (Feng (2002:132)). ba can hence be re-analysed as an accusative case-marker marking the object (qin ‘lute’) of the second main verb (‘I often take a lute to play > I often play a lute’) (cf ex. 18b). \(^{30}\)

21b) is ‘simpler’ than 21a), since both verbs (ba, nong) lose their movement to their respective little v (v2) and ba is merged in little v (v1) as a case-marker (K). Furthermore, as ba now marks the object (qin) of the second main verb (nong), its interpretable verbal features ([i-V]) become uninterpretable ([u-V]) (see footnote 24). Moreover, as the main verb (nong) now subcategorises for the baP as its object ([u-K]), it cannot select any other complement and so the second VP is simplified as V (cf 18b, 20)). The grammaticalization of Chinese ba therefore conforms to R & R’s and van Gelderen’s ‘simplicity’. However, although ba is shifted upwards from V to v1, it acquires interpretable K features ([i-K]) that are not upwardly shifted, since Chinese has never had morphological case and does not have interpretable K features in the first place (see section 2.2). Rather, these features are derived from pragmatic implicature, namely the possibility to re-analyse the first VP of a serial verb construction as the complement of the second verb (‘I take a lute to play’ > ‘I play a lute’). ba therefore conforms to ‘lateral’ grammaticalization (see sections 1.2).

\(^{30}\) At an earlier stage, there are examples where a resumptive pronoun is used as the complement of the second verb (Chappell and Peyraube (2011:788)), and this is retained in certain dialects (see footnote 25) e.g.

1) ru jiang ci ren anxu sha zhi wu sun pi rou
       PRO.2SG take DEM.PRO man careful kill PRO.3SG NEG damage skin flesh
‘You take this man, and kill him, carefully without damaging his skin and flesh.’ > ‘you kill this man without damaging his skin and flesh.’ (Fo Shuo Chang A Han Jing, 4\(^{th}\)-5\(^{th}\) century AD) There is co-reference between the complement of jiang (ci ren ‘this man’) and the resumptive pronoun (zhi ‘him’), the omission of the latter leads to the re-analysis above (21).
There is empirical evidence in support of all this, as *ba* and all other Chinese case-markers do not display ‘phonological weakening’ or ‘univerbation’. *ba* is still toned (tone 3) in modern Mandarin, as are all Chinese case-markers (see footnote 20): *jiang* (tone 1), *qu* (tone 3), *na* (tone 2), *gei* (tone 3), *bang* (tone 4), *dai* (tone 4), *gong* (tone 4), *tong* (tone 2), *gen* (tone 1), *bei* (tone 4). The ‘lateral’ grammaticalization of Chinese *ba* (K) is therefore empirically justified, which entails that there is no ‘semantic bleaching’ either, since *ba* has gained interpretable K features ([i-K]) from pragmatics. The ‘lateral’ grammaticalization of Chinese *ba* further entails that K does not exist in Chinese as it seems to have been ‘laterally’ grammaticalized in Chinese case-markers (K). K(case) is therefore not equivalent to abstract case and cannot be postulated universally.

4. Conclusions
‘Lateral’ grammaticalization conforms partially to the Minimalist accounts of grammaticalization (sections 1.2-1.3), and there is empirical evidence which suggests that Chinese case-markers (K) are ‘laterally’ grammaticalized (section 3.2). ‘Lateral’ grammaticalization, therefore, is a very relevant topic in Chinese syntax, since it is manifested by three constructions (*shi-de, shi, ba*), and the fact that it seems to have occurred in the grammaticalization of Chinese case-markers suggests that K(case) is not equivalent to abstract case, which coincides with the synchronic and typological arguments for the postulation of K(case) (section 2).

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31 Zou (1995:77) argues that in certain dialects *ba* is pronounced differently depending on whether it is used as a lexical verb [ba] or as a case-marker [bai]. However, as [bai] is not ‘phonologically weaker’ than [ba], these should perhaps be analysed as variant pronunciations.

32 Feng (2002:134-145) argues that when *ba* is grammaticalized, there is a prosodic shift away from *ba* to the second main verb. However, as this has not led to any loss of phonological/phonetic segment in *ba*, prosody should perhaps be considered as extra-phonological here.

33 If K(case) is universal, the complement of *ba* in 21a) (*qin*) should be a KP and its interpretable K features ([i-K]) should have been shifted upwards from *qin* to *ba* in 21b). This ‘upward feature analysis’ would have entailed ‘phonological weakening’, ‘univerbation’ and ‘semantic bleaching’, which does not hold true.
TSE: THE GRAMMATICALIZATION OF CHINESE BA


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