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KE AND *NENG* ANALYSIS IN CHINESE DOUBLE (TR) – *ABLE*

This is a brief sketch on word formation with Chinese functional morphemes $k\check{e}^1$ and *néng*. What we will try to prove here is why both of them (*ke* and *neng*), in the formation of adjectives (and deadjectival nouns), can correspond to the English adjectival suffixes - *able/ible*.

Historical background – a short history of the 'conflict'

 $K\tilde{e}^2$, *néng*, *kě*, *kān*, *dé* and *zú* are six auxiliary verbs which (apart from their other meanings) in classical Chinese denote the possibility of an action. All of them can be translated into modern Chinese as *kěyĭ*, *néng*, *kěnéng*, *nénggòu* (that is *can/may* or *can/be able to/be capable of*). Only two of them, *ke* and *neng*, have survived the test of time and are now auxiliary/modal verbs in modern Chinese.

Before going more deeply into the problem, let us remember two important facts about classical Chinese:

1) frequent polysemy of words and morphemes consequently leads to a situation where a single word/morpheme can be converted from one part of speech to another³.

¹ The tone marks are those of the four tones of Mandarin Chinese and are indicated only in cases of possible ambiguity due to toneless *pinyin* transcription.

² Auxiliary verb $k\tilde{e}$ is the first one recorded in ancient scripts (Yang and He: 1992) and also the first one to be *used* by the Qin dynasty (3 c. BC). In modern Chinese $k\tilde{e}$ (with unchanged meaning can) *can* only be found in the written language and in rare expressions like $k\tilde{e}$ *qin* $k\tilde{e}$ *jian* 'have capacity for industry and thrift', 'be industrious and frugal', or *buk* \tilde{e} 'be unable to?, 'cannot'. Hereafter $k\tilde{e}$ will always be written with its tone mark, while $k\tilde{e}$ in the context (to avoid misunderstanding) will be written as *ke*, without its tone mark. *Kān*, like $k\tilde{e}$, only forms idiomatic expressions such as *kan dang zhong ren* 'be capable of shouldering important tasks?, 'can take a position of great responsibility'. *Dé* and *zú* (following the example of $k\tilde{e}$ and *Kān*) have also lost their auxiliary function.

³ As we will see further on, *keneng* can be an auxiliary verb (*can/be able to*), an adjective (*possible*) or an adverb (*possibly/maybe*).

2) classical Chinese is not a monosyllabic language; complex lexemes formed out of both content and functional morphemes are not isolated cases.

A separate analysis of *ke* and *neng* with respect to these two facts, along with the elimination of all irrelevant data, gives us the following results. *Ke*, regarded only as an auxiliary verb, has several meanings: *keyi (can/may), neng/nenggou (can/be able to/be capable of)* and *zhide (to be worth)*⁴. As such, *ke* soon enters into word formation, resulting in functional pairs/auxiliaries like *keyi*⁵ (*can/may*) and *keneng (can/may)*, which still function as auxiliaries in modern Chinese, and also form adjectives such as *ke'ai (lovable/worthy of being loved), kelian (pitiable, pitiful)* etc. *Neng* as auxiliary verb has almost the same meanings as *ke*, that is: *neng/nenggou (can/be able to/be capable of)*, *keyi (can/may)* and *bui (be able to/be skillful in)* but, unlike *ke*, with its auxiliary meaning it doesn't form any words.

Briefly, in preparation for a giant leap into the future, we could sum up the data and see that the situation in classical Chinese seems pretty clear: semantically *ke:neng* are very close but as for word formation *ke* is in the lead.

Disentangling the Chinese knot

We will start by making a few notes on the features of our rivals. Both are Aux verbs⁶ often listed in the same class. Syntactically, *neng* has to take VP as its complement, while *keyi*⁷ does not⁸; *neng* can be

⁴ Chinese lexicographers, though very diligent in collecting words, still have notably serious problems concerning classifying them into categories. Above-mentioned *zhide (to be worth)* in some dictionaries is classified as an Aux, in others as a common verb. *Neng* and *ke* very often share the same destiny.

⁵ *Ke* with the same *yi*, but with its prepositional meaning: *to use (!)* also forms an homophonous expression of two words *ke yi (can be used as, e.g. 'Fa bu ren,bu ke yi fa' '[If] the government is not human/benevolent, [then it] cannot be (used as) government'* (Chinese philosopher Mozi, *Fayi* 4c. BC). Even more interesting is the complex function word, auxiliary *keyi*, which according to *Gudai hanyu xuci cidian* (1999) is actually the product of merging Aux *ke* with conjunction *yi*.

⁶ A very interesting classification of modal/aux verbs in modern Chinese is presented in Liu, Fan and Gu (2001: 170-171).

⁷ *Ke* from ancient Chinese is in most cases *keyi* in modern Chinese. In the written language morpheme *yi* is very frequently omitted, thus restoring *keyi* to its initial classical form. Contrarily, in spoken Chinese *ke* is always *keyi*, and the only exceptions are idiomatic expressions.

⁸ *Keyi* can be predicate of the sentence as, for instance: <u>*Ta lai keyi*</u> [[_{IP} *ta lai*] [_{Aux} *keyi*]] *he come can/may '[that] he comes is possible/allowable'* [literal translation]. (cf. <u>*Ta keyi*</u> *lai* [[_{DP} *ta*] [_{CP} *keyi lai*]]*be can/may come*).

negated by *bu (not/no)* and can form positive-negative questions⁹, while *keyi* is negated by the negative form of *neng* (i.e. *bu neng*) and cannot form positive-negative questions¹⁰. Semantically, they are still very close and the slight difference between them is fairly convincingly stated by Lǔ (1994): "<u>Neng lays more emphasis on capability</u>, *while <u>keyi lays more</u> on possibility*". But on the battlefield of word formation, the situation is rather more complicated.

The hypothesis that *ke* and *neng* both correspond to English adjectival suffix *-able* is based on their semantic closeness (i.e. meaning with which they form adjectives) and the same linear and structural position in the words they form (as will be shown later, reliable = *kekao* [A[Aux ke] [V]], *capable* = *nenggan* [A[Aux neng] [V]]). In seeking proof for our hypothesis we will step by step analyze all the aspects of the problem.

Great semantic similarity - the source of the 'trouble'

Now, resorting to fact number 1 about classical Chinese (which is also applicable to modern Chinese) we can free our investigation from needless polysemy and thus disregard all other (for us) peripheral meanings. We will focus on *ke/neng* only as auxiliaries which we presume correspond to the English suffix *-able*. The information gathered from many dictionaries and informants provides us with the following feedback:

KE - the problematic polysemy

Ke₁ = keyi = can/may $neng (gou)^{11}$ can, be able to, be capable of keneng = can/be able to, be possible, possibly/maybe keneng apparently functions as auxiliary verb, adjective or adverb, hence in cases such as 'ta keneng lai' ambiguity is inevi-

table¹². **ke**₂ = *zhide* = to be worth

¹² It is either [[_{DP} ta] [_{CP} keneng lai]] be can/may come or [[_{DP} ta] [_{IP}[Adv keneng] [_{VP} lai]], be (will) possibly/maybe come.

E.g. Ta <u>neng bu neng</u> lai? 'He <u>can not can</u> come?'

¹⁰ This is the rule found in (very prescriptively oriented) Chinese grammars, but in colloquial speech and many dialects of Chinese *keyi bu keyi* is not such a rare animal.

¹¹ The difference between *neng* and *nenggou* is that *neng* is more frequent than *nenggou* and can form positive-negative questions, while the other one cannot.

According to grammars¹³ *zhide* itself is an auxiliary verb. The mere meaning of the word/morpheme could cast doubts on its potential to be a candidate for the *-able* counterpart. To overcome such an obstacle we here present two pieces of evidence. On one side there is notable inconsistency in dictionary explanations¹⁴; on the other, in many cases of words presented none of our informants could say precisely whether the ke in question (e.g. kekao, ke'ai or kebei) is ke or ke₂ and couldn't draw a line between the two of them. (Nevertheless, in some other cases informants were pretty sure that ke is actually ke_1 but not ke_2). If we now extend our focus to their semantic scope, we will see that the meaning of ke_1 is more basic (and wider) than ke_2 . In other words the 'worthiness' of ke_2 presupposes the 'possibility' of ke1 (that is, if somebody/something is worth relying on, this presupposes that he/it can be relied on), or the other way round 'possibility' that ke1 precedes the 'worthiness' of ke2 (if somebody/something can be trusted, then he/it can also be worthy of trust¹⁵). The reasoning presented above allows us to unify these two $ke_{1/2}$ into a single ke which is the first '-able' in modern Chinese. This assumption was fortunately confirmed by informants.

(**ke**₃ = *shihe* = be appropriate/suitable for, be fit to).

Why are we dealing with this one, when it isn't an Aux at all? The answer lies in the fact that it also forms adjectives with the same linear order as (unified) *ke* and *neng*. Even more important is the fact that this *ke*, unlike 'our' *ke/neng*, in word formation process selects a noun (not a verb) and that it is repeatedly and misleadingly 'packed' together with two other ke as one single prefix¹⁶, which contradicts our initial premise and future observations, but is still worth noticing.

Neng - the non-problematic polysemy

*Neng*₁ = *can*, be able to, be capable of

¹³ In Liu, Fan and Gu (2001) *zhide* is classified as a modal verb which expresses judgment, while *ke, keyi* and *neng* are grouped in another class of auxiliaries denoting *'judgment based on subjective or objective conditions'!*

¹⁴ For example, it could be found that the adjective 'pitiable = *kebei*' means [something that by its characteristics] can make one sad or (just) [something that by its characteristics] can make one something that is worth pity.

¹⁵ We admit, however, that 'possibility'can precede everything.

¹⁶ Words formed this way are *kekou* [$_{A[AUX}$ ke] [$_{N}$ mouth]] 'tasty', *keyi* [$_{A[AUX}$ ke] [$_{N}$ wish/thought]] 'that is as one wishes/satisfactory', *kexin* [$_{A[AUX}$ ke] [$_{N}$ heart]] 'that is as heart [wishes]'.

 $Neng_2 = hui =$ be skillful/proficient in, be able to¹⁷ $Neng_3 = yinggai =$ should, ought to, must/have to

Knowing that:

*Neng*₃ does not form any words,

Neng₂ forms only a few rare expressions and

*Neng*₁, unlike $neng_{1/2}$, takes a verb and forms an adjective, we can with no doubt pronounce $neng_1$ to be the second *'-able'* of modern Chinese.

Inferring from the above arguments, we can state that both (unified) *ke* and *neng* by virtue of their meaning¹⁸ could both be 'Chinese –*able*'. But, apart from their (not always so perceivable) semantic similarity, there is still no firm evidence to support this hypothesis.

So far (not) so good.

Word formation - the crux of the matter

This is the key which gives us answers to:

why ke/neng can be considered as Chinese -able (s) and

why we say that they *only* correspond to English adjectival suffix *-able*.

Ke vs. neng shows ke = neng

Observing the following examples of adjectives and (de-adjectival) nouns we can clearly see that word structures formed by *ke* and *neng* are the same.

¹⁷ For some syntactic and semantic features of *neng* and *hui* see Watanabe (1999), in *Modern Chinese Grammar Studies Meeting the Challenge of the New Century* (pp. 476-486).

¹⁸ More precisely, by the overlapping of their semantic scopes: *(unified)* $ke = ke_1 + ke_2$ covers the range of can/may, be capable of, be possible *(keneng)*, be worth, while *neng* = can, be able, be capable of.



Or in other words the inner structure of adjectives composed by *ke/neng* is



And it is very similar to auxiliary CP structure where Aux takes an IP as its complement (cf.(4)and (5)).



Nouns composed with *ke/neng* adjectives again as in (2),(3),(6) show inner syntactic structure of an NP.



From the examples presented above we can conclude that *ke* and *neng* can both be regarded as Chinese counterparts of the English adjectival suffix *-able*. The necessary conditions are satisfied:

 19 *Yi* is very often omitted in written language and various expressions (proverbs and the like). See footnote 7.

²⁰ Adverb *hen* = 'very' in sentences like the ones above has no usual adverbial meaning and if not present in a sentence, the same would be misunderstood as some kind of incomplete sentential comparison cf. *ta kekao, Zhang bu kekao 'he is reliable, but Zhang isn't and ta ben kekao 'he is reliable'.*

²¹ The structure of (6) could be most conveniently compared with N-final relative clauses e.g. *hui kai che de guniang 'can/know drive car [de] girl'* [literal translation] where the particle *de*, traditionally called nominal 'modifying *de'*, is in recent works (He, 1999; Simpson, 2000) analyzed as clitic-like zero determiner.

- 1. their semantic scope in this particular case of adjective formation are the same; both in this particular case mean *can/may*.
- 2. the inner structure of the adjectives they compose (and accordingly of the de-adjectival nouns derived from them) are practically the same; both select verbs to form adjectives which in turn take a suffix or noun to form more complex lexemes.

In addition to this, the existence of synonyms formed both by *ke* and *neng* provides valuable evidence in support of our hypothesis:

<u>kej</u> iandu	>visibility	<u>ke</u> yuxing > <i>fertility</i>	fertilizability,
<u>neng</u> jiandu	<i>cuy</i>	nengyuxing	
<u>ke</u> kongxing	>controllability		

nengkongxing

These cases where *ke/neng* are exchangeable without any impact on the meaning of composed words are the best demonstration that both (semantic and structural) conditions are satisfied and that *ke* and *neng* both correspond to English *-able*. Nevertheless, such cases raise another question: is this *ke/neng* adjectival formation actually a kind of allomorphy? The answers are yes and no. No, simply because to have any kind of allomorphy there have to be different contexts of occurrence of one allomorph or the other. This is not the case here, since *ke/neng* both select a verb to form an adjective (i.e. select the same category, [$_{A}[_{Aux} ke/neng]$ [$_{V}$ X]]). Yes, and yes **only** in this particular case of formation, because – due to semantic reasons – both *ke* and *neng* have the same meaning, but a different morphophonological form (which is reason enough to reconsider the possible presence of allomorphy). This question, however, still remains unanswered.

The reason why we insisted on the detail that *ke/neng* in Chinese can **only** correspond to *-able/ible* in French/English²² resides in the fact that they are equal in semantic scope but different in its realization (formalization), that is *-able/ible* is a suffix hosted by a verb, while *ke/neng* (though linearly placed as such) are not prefixes and they select a verb to form an adjective.

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²² -Abile/ibile in Italian/Spanish, -iv/ljiv in Serbo-Croat etc.

Some problems related to ke:neng

Ke:neng productivity

Apart from their sameness (in meaning and formation patterns considered), on the ground of productivity *ke* and *neng* differ considerably. *Ke* is very productive (while *neng* forms only a modicum of adjectives and not many more lexemes structurally equal to those of *ke*-de-adjectival nouns. In other words there is *nengsbixing* (identifiability) but not *nengshi* identifiable); there is *nengchengxingxing* (figurability) but not *nengchengxing* (figurable) etc. At a glance, there seems to be no apparent reason for such a situation, but it would again be too simple to claim that this kind of phenomenon is just a result of idiosyncrasy or historical reasons²³. A possible source of explanations could be concealed in the problems listed:

- a) <u>scope of meaning</u> of auxiliary *ke* which is far wider than that of *neng*;
- b) *Ke* syntactically forms some kinds of constructions that *neng* doesn't, e.g.:

Fei X bu ke = *must/have to: Ta <u>fei</u> canjia zhe ge yanhui <u>bu ke</u>. <i>He <u>not participate this (classifier) party no can* [literal translation]</u>

he must come to this party (there is) no possibility that he doesn't come...

Ke X (er) bu ke Y = *can X (but) not Y:<u>ke</u> wang <u>er bu ke ji</u> <u><i>Can* see <u>but not can</u> reach</u>

(one) can see but not reach/unreachable **Ke X ke Y** = can X [and/or] can Y: Zhe ge qingkuang <u>ke</u> bei <u>ke</u> xiao.

This (classifier) situation <u>can</u> sad <u>can</u> laugh

[literal translation] This situation is (both) sad and ridiculous

It seems that within *ke X ke Y* constructions ke leaves open slots (*X* and *Y*) to be filled with verbs or adjectives (*ke* V/A ke V/A²⁴)

²³ The presence of new words (as for instance: *nengguancexing* 'observability', nengdaji 'reachable sets') eliminates the possibility that *ke* during historical development replaced *neng* and thus became more productive than *neng*.

²⁴ In the example above 'the slots' are actually filled with A and V respectively: adjective *bei* 'sad' and verb *xiao* 'laugh'. Even decomposed complex verbs can be inserted e.g. *ke qing ke he* 'could be congratulated/be worthy of congratulations', the verb *qinghe* means 'to congratulate'. However, in this case we might argue about whether: 1) morphemes *X* and *Y* were inserted in 'the slots' before they merged into a single *XY* verb =

which can be antonyms or similar in meaning. In this way *ke*, though less selective than 'adjectival *ke*' (where only V can be inserted) forms constructions of an adjectival nature which are, as a matter of fact, A, composed out of two (coordinated) APs [$_{A'}$ [AP *ke* X] [AP *ke* Y]]. If antonyms are coordinated, the conjunction would be "or" and in the case of non-antonyms "and" would stand instead. But whatever the meaning of the inserted V/A might be, it seems that there is a consensus among the informants that for them this kind of construction is very similar to *chengyu* (typical) Chinese four syllable proverb and that they perceive it as a kind of idiomatic expression not as constructions like *fei X bu ke* (where *X* can be A/V/VP/IP)²⁵.

It has to be pointed out that *neng* composes superficially the same type of A' constructions **neng X neng Y**. Again the difference between these two lies in the meaning of *ke/neng*. *Neng* in this kind of expression has the auxiliary meaning of our $neng_2$ (i.e. another Aux *hui* = be skillful in, be proficient and does not denote the possibility of an action)²⁶.

 $K\hat{e}$, already mentioned Aux of classical Chinese, also forms the same type of constructions $k\hat{e}$

X ke Y. But being only a rudiment of the past, today it is unproductive and is rarely used (see footnote 2).

- c) The information that *ke*, *neng* and *kè* all form this type of superficially similar 'A' construction brings us one more dimension of the problem. Practically all three, "still living" ancient Aux, which once denoted possibility now form 'A' constructions. Nevertheless, bearing in mind all the previously mentioned details we see that:
 - 1) <u>only *ke*</u>, with the same semantic content of 'possibility', forms both *ke*-adjectives and the 'A' constructions;

qingbe; 2) complex verb *XY was* decomposed to morphemes *X* and *Y* which were afterwards inserted in slots opened by both *ke*. This is, as a matter of fact, a question of establishing the exact historical moment when this particular construction emerged, in other words, the question of which one (the verb or the construction) preceded the other. Without a sufficient amount of historical and lexicographical data, we cannot determine which of these two assumptions is correct and, relying on the present state of affairs (i.e. data provided by modern Chinese), all we can say is that here/now we have decomposed complex verbs.

²⁵ An intriguing fact about these *ke* X *ke* Y constructions is that as A they can also compose de-adjectival nouns such as the very interesting case: *ke ca ke bian cheng xu zhi du cun chu qi* 'erasable (and) programmable read only memory'.

²⁶ E.g. *neng wen neng wu* 'be skillful in using both pen and rifle, efficient both in brainy and brawny activities'.

- Neng is not so semantically consistent and varies according to the context of occurrence. Within the adjectives it is 'our' neng₁ (parallel to -able) and in the 'A' constructions it is neng₂ (bui = be skillful in);
- 3) *Kè* is formation-inactive.

This semantic consistency in *ke*-word/construction formation (along with the issues presented above) might be one of the reasons why *ke* is much more productive than *neng*. The problem of *ke:neng* productivity is thus clearly a set of interrelated problems which put into historical context make a possible/plausible explanation even more complicated.

Ke - prefix or (still) not

In our little investigation Aux ke is treated not like a prefix, but as an auxiliary verb which with another (selected) verb composes complex (lexical head). This kind of analysis is the opposite of interpretations found in many dictionaries. The grounds for such an anti-prefix approach are twofold. First, grammars of contemporary Chinese (if they treat this problem at all) present the fact that ke cannot be considered as a true affix like *lao* or jia^{27} . According to Fang (1993: 54): "In modern Chinese, strictly speaking, there are only a few true prefixes, ..., but within compound words some very productive first morphemes like 'ke, fan, fei etc. show a tendency to become prefixes". Note that ke is (still) not a prefix! Second, and evenmore significant for us, informants were quite clear about the meaning of ke/neng (within words such as kexiao, or nenggan) and equally uncertain about the meaning of true pre/suffixes presented to them (long hesitation pauses, big differences in answers etc.). These two facts (along with *neng* being a non-prefix itself) were valid enough reasons for us to disregard the *ke*-prefix interpretation and analyze it in the way we did. Just a short note on this *tendency*. With all due respect to Chinese grammarians but also taking into account the fact that some keformed adjectives can be traced back to the Han dynasty (3c.BC-3c.AD!²⁸, we might ask one question: isn't a period of more than

²⁷ Both *lao* and *jia* are words of modern Chinese. Adjective *lao* 'old' and noun *jia* 'family, home, household'. As for word formation, *lao*- is a prefix denoting respect (*laos-bi* 'teacher', *laobu* 'tiger' etc), *-jia* is a suffix denoting a specialist or professional in certain trades (*zuojia*) 'writer', *huajia* 'painter', *zhuanjia* 'specialist'), *zi* is one of the most productive nominal suffixes (*kuaizi*) 'Chinese sticks', *benzi* 'notebook' etc).

 $^{^{28}}$ E.g. *ke'ai* = lovable (Han dynasty and after), *kegui* = precious, valuable (period of Three Kingdoms, kingdom Wei 3c. AD) etc.

2000 years of language development a bit too long for a morpheme to develop just a *'tendency to become a prefix'*. Some other affixes 'needed' considerably less time to become what they are today).

Selection – possible problems

Whatever approach we prefer (*ke* being prefix or not), a few following puzzling examples show that *ke* selects a verb to form not only an adjective but also a verb or even a conjunction.

Kewei $[_{V}[_{Aux} \text{ ke}] [_{V} \text{ wei}]]$ can/could be said

Ke here selects V to form V. *Kedao, keshuo*²⁹ also follow this example.

Kejian [_{Coni/V} [_{Aux} ke] [_V jian]] (it) is (thus) clear/obvious

Ke here selects V to form V or Conj. Whether it is a verb or a conjunction is still the question (or maybe only one more problem of Chinese grammarians' classification).

Keneng [A/Adv/Aux[Aux ke] [Aux neng]] possible, possibly, can/may/be able/capable

Keneng seems to be a special case in many aspects.

Ke selects *neng*, i.e. selects Aux not V (as in other *ke*-adjectives). This is the only case where an Aux not V (as in other *ke*-adjectives). This is the only case where an Aux selects another Aux and forms A/Adv/Aux. Considering that this is the combination of our two Chinese *-able(s)*['] and that they both in this particular case of formation denote possibility, we may ask why they can't be placed in reversed linear order like *nengke*³⁰. Though *neng* (by its occurrence in ancient scripts) historically precedes *ke* (Yang & He 1992), it is the one to be selected, not vice versa.

The last example shows that *ke* (contrary to its semantic aspect) is not always consistent in selection and can vary. Even more interesting are the cases where a verb is selected (*kewei* and *kejian*) but the result of formation is not necessarily an adjective. This situation, of course, prevents us from formulating a possible general rule of [A[Aux ke][V]] composition of Chinese '*-able*-type' adjectives. But the prevailing majority of *ke*-adjectives still give us the right to claim that such a rule, though not general in scope, does in fact exist.

²⁹ *Kewei/kedao* are stylistically marked verbs of the same to them neutral *keshuo*. All three have the same meaning can/could be said.

⁵⁰ Earlier there was, however, conjunction *nengke*. The trouble is that the *neng* in question wasn't the Aux *neng*, but practically the allomorph of conjunction *ning* 'would rather/better' and *ke* also isn't Aux.

Concluding remarks

In this article we presented and proved the hypotheses that *ke* and *neng*, two auxiliaries of modern Chinese, both correspond to the English adjectival suffix-*able*. Taking into account the historical background of *ke/neng* word formation and via explaining their semantic similarity we eliminated all peripheral issues. By focusing on the adjective formation patterns we showed that *ke* in this particular case of adjectival formation is equal to *neng* and that both of them can be declared as *'Chinese -able(s)'*. The presence of many related problems, of which we only mentioned a few – *ke/neng* (questionable) allomorphy, big difference in productivity **and** *ke-selection* –, necessarily calls for further analysis of the subject presented here.

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