

Adjectivals and Adverbials: On the Representation of Quantities and Qualities in Chinese and Implications for Language Typology

Jack H. Rouzer
The Ohio State University

A distinction in the part-of-speech representation of quantities and qualities whether adverbially or adjectivally between Chinese and English is seen in sentences like:

ta jia-cuo le ren
she marry-wrong PERF person
?she mis-married a person (adverb quality glosses in English as
adjective quality:
'She married the wrong person' (Hsieh (1978)).

This preference in Chinese for representing quantities and qualities adverbially persists when Chinese native speakers write in English exemplified by sentence 'a'—where quantity is represented adverbially; compared to the more English-like alternative sentence 'b' where quantity is represented adjectivally.

- a. ?We need to study more on actual student behavior.
- b. We need more study on actual student behavior.

The extent of this adjective-adverb distinction was tested by asking Chinese native speakers, bilingual in English, to translate a set of English, 'b' type, adjectival sentences into Chinese. Results confirm the preference for adverbial representation in Chinese—suggesting a useful parameter for language typology.

0. Introduction

2,000 years ago Gongsun Long, in the 3rd c. B.C. Zhanguo period, set up a famous paradox that has irritated Confucianists and linguists ever since. It is, of course: 白马非马, bai-2 ma-3 fei-1 ma-3—'white horse is-not horse.' Chad Hansen (1983) says that this paradox—to make sense—casts doubt on or mitigates the ontological status of NP referents in Chinese. 'Whiteness' and 'horseness' have parity; neither object nor attribute are privileged. Both nominals and attributes in Classical Chinese refer to discontinuous mass and reference entails picking out part of the whole. Thus the combination of 'whiteness' and 'horseness' is not—just—'horseness' since the part does not instantiate the whole; i.e., one feature does not instantiate the whole referent.

However, some critics, e.g., Graham (1986), and Harbsmeier (1991) refuse to abide Hansen, in this way, anachronistically attributing Lesniewski's notion of mereological set (cf. Luschei 1962) to Classical Chinese—such that nominals and attributes refer

to essences scattered throughout Einstein's space-time continuum. Nevertheless, the idea implicit in Hansen's Mass-Noun Hypothesis that problematizes the status of NP referents is planted. Is it possible to have an ontology that does not privilege object over attribute? It is hard to imagine; but it does make one wonder about the ontological status of NP's in a mass-noun/non-count language such as Chinese.

We say that Chinese is a mass-noun/non-count language because NP's lack inflectional morphology. Modern Chinese remains a relatively isolating language—nouns in Chinese are not marked for plural; counting requires the use of classifier terms. These morpho-syntactic features suggest that reference entails picking out part of the whole (mass) rather than picking out individual members of a set. What little morphological marking there is in Chinese has to do with that other main part of speech, the verb. In Resultative Verb Compounds (RVC's), for example, there is scrupulous attention to aspectual features of activities such as entering in 1 and running in 2:

(1) ta jin-guo-lai
he/she enter-through-come

(2) ta pao-chu-qu
He/she run-away-go

At the sentence level, Chinese exhibits topic-prominent structures rather than subject-prominent structures—which permits zero-PRO for subject reference as in 3:

(3) nei-kuai tian; daozi zhang de hen da; suoyi hen zhiqian
That-CL field; rice grow DE very big; therefore very valuable

Structures like this show that less attention is paid to NP's. In this light, Chinese syntax exhibits more attention to action-outcome versus agent-action; agents/subjects may or may not be represented and actions are represented by elaborated VP morphology.

With reference to another part-of-speech, the adjective, one sees that in Chinese, adjectives are usually represented as stative predicates as in 4; i.e., without any BE-form/copula paraphernalia:

(4) ta piaoliang
She beautiful

When modifying a noun phrase, adjectives show up in the guise of pre-modifying adjective clause, and, as such, they preserve their verby, predicate character—as in 5:

(5) hen piaoliang de guniang
very beautiful DE girl

In Li and Thompson's (1981) view, Chinese thus "[lacks] a distinct class of adjectives." In essence, adjectives have been promoted to something more verb-like. This is also the view in Wetzer (1996), who says that Chinese thus exhibits +verby adjectives, which with respect to typology is a feature of languages like Chinese that do not mark for tense. (The predominance of predicate adjectives and the absence of tense-marking is a striking correlation noticed in Wetzer's study of the world's languages.)

One could recapitulate the above sketch of broad facts about Chinese syntax by saying that Chinese thus exhibits an accumulation of features that makes it less nouny and more verby than other languages—e.g., English. The terms, 'nouny,' and 'nouniness,' of course, have a pedigree going back to John Ross (1973) and later applied to Chinese by Chan Ning-Ping in her (1985) dissertation titled, *The Nouny Alternative*. Here, we can use the term, nouny, to denote an accumulation of features that suggest, under the aegis of something like conceptual coherence, an underlying, language-internal explanation for the distribution of morpho-syntactic features, including the distribution of parts-of-speech categories. For example, if Chinese is less nouny than English, then one might predict that adjectives and adverbs might distribute differently across the two types of languages.

1. Adjectivals versus Adverbials

Some hints that the distribution might be different can be gotten from sentences such as 1 to 5 below—where it can be seen that quantities and qualities represented adverbially in Mandarin normally gloss adjectivally in English (example numbering restarts here at 1 for convenience of discussion):

(1) ta jia-cuo-le ren
 she marry-wrong-PERF person
 ?she mis-married a person (adverb quality)
 glosses in English as adjective quality:
 'She married the wrong person.' (Hsieh 1978)

(2) ta you diu-le yi-ben(r) shu
 he again lost-PERF one-CL book
 ?he again lost a book (adverb quantity)
 glosses in English as adjective quantity:
 'He lost another book.' (Tai 1982)

(3) ta shi women xin-lai-de laoshi.
 he is our new-arrive-NOM teacher
 he is our newly arrived teacher (adverb quality)
 glosses in English as adjective quality:
 'He is our new teacher.'

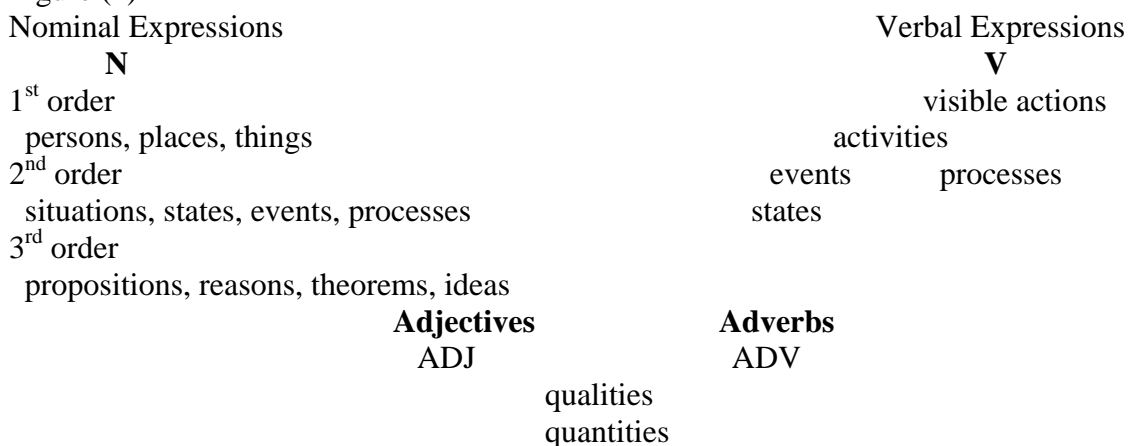
(4) ta you chi-le yi-wan fan
 he again eat-PERF one-bowl rice (adverb quantity)
 glosses in English as adjective quantity:
 ‘He ate another bowl of rice.’ (Tai 1982)

(5) san-ben shu ta dou kan-le
 three-CL book he all read-PERF (adverb quantity)
 glosses in English as adjective quantity:
 ‘He read all three books.’ (Tai 1982)

In 1 and 3 the qualities, ‘wrongness’ and ‘newness’ are represented adverbially in Chinese but adjectivally in the English glosses. In 2 and 4, the quantity, ‘another’ is represented adverbially in Chinese, but adjectivally in English. Similarly in 5, the quantity, ‘all’ is represented adverbially in Chinese, but adjectivally in English.

Figure (1), below, based on Lyons (1966, 1977), is our attempt to make graphic the fact that parts-of-speech categories can distribute differently across languages. From Lyons’ (1966) ‘ontologically neutral framework for parts-of-speech,’ pristine nominals, i.e., persons, places, and concrete things, anchor the left end of the continuum, while pristine verbals, i.e., visible actions, anchor the right end of the continuum. In principle, everything in between is negotiable. This schema can also be understood with reference to Givon’s (1993) notion of time-stability, such that nouns code a cluster of time-stable features—with attendant effects such as object permanence and countability—whereas, verbs code rapid changes, experiential clusters that are low on the time-stability scale, and, thus, anchor the opposite end of the ‘lexical-phenomenological scale.’

Figure (1)



What the figure should suggest is that between the two poles, the part-of-speech coding of experiential phenomena can shift across languages. In a nouny language, the

coding shifts to the left and in a verby language, the coding shifts to the right. Furthermore, when scanned from the top down, the figure is meant to represent increasing abstraction away from the prototype nominals and verbals and is also meant to suggest the increasing likelihood of overlap and convergence in the part-of-speech coding of the experiential phenomena. Thus, for example, events and processes are liable to be represented as nominals and as verbals both across and within languages (Rouzer 2003).

These notions about the mutability of part-of-speech categories are brought to mind when one looks at sentences produced by advanced writers of English whose first language is Chinese. The preference for representing quantities and qualities adverbially, described in 1 to 5 above, is manifested quite clearly in the writing of Chinese learners of English as a second language. The ‘a’ sentences, below—in which quantity and quality is represented adverbially were produced by Chinese learners of English as a second language. The ‘b’ sentences—in which quantity and quality is represented adjectivally—are the more nouny alternative.

- (6) a. I will visit interesting places as many as possible.
 b. I will visit as many interesting places as possible.
- (7) a. The authors offer a definition of fuzzy variables roughly.
 b. The authors offer a rough definition of fuzzy variables.
- (8) a. She completely resolved the matter.
 b. She resolved the entire matter.
- (9) a. Such questions can be listed a lot.
 b. Many such questions can be listed.
- (10) a. He predominately adopted Smith’s earlier methodology.
 b. He adopted most of Smith’s earlier methodology.
- (11) a. We need to study more on actual student behavior.
 b. We need more study of actual behavior.
- (12) a. Smith emphasizes more on the relationship between the two.
 b. Smith puts more emphasis on the relationship between the two.
- (13) a. Autopsies have barely revealed evidence of this linkage.
 b. Autopsies have revealed little evidence of this linkage.
- (14) a. Both of these findings cannot explain the observation.
 b. Neither of these findings can explain the observation.

- (15) a. These factors almost have no effect.
 b. These factors have almost no effect.

The pattern of contrast in the part-of-speech representation of quantities and qualities exhibited in the above sentences raises the following questions: How durable and extensive is this distinction? Is this distinction significant enough to be considered as a typological parameter when contrasting the world's languages? In order to test the durability and extent of this distinction, four native speakers of Chinese, fluent in L-2 English, were asked to translate the nouny versions of the above 15 sentences—in which quantities and qualities are represented adjectivally—into Chinese.

2. Supporting Evidence

Asking native speakers of Chinese who are bilingual in English to translate the above nouny sentences into Mandarin got the following results. The four individual informants are identified by the letters a, b, c, and d for each sentence that they produced.

(1') She married the wrong person.

(1a') ta jia-cuo-le ren
 she marry-wrong-PERF person

(1b') ta jia-cuo le ren

(1c') ta jia-cuo-le ren

(1d') ta jie-cuo hun-le
 she tie-wrong marry-PERF

(2') He lost another book.

(2a') ta you diu-le yi-ben shu
 he again lost-PERF one-CL book

(2b') ta you diu-le yi-ben shu

(2c') ta you diu-le yi-ben shu

(2d') ta you diu-le ben shu

(3') She is our new teacher.

(3a') ta shi women de xin laoshi
 she is we POSS new teacher

(3b') ta shi women de xin laoshi

(3c') ta shi women de xin laoshi

(3d') ta shi women de xin laoshi

(4') He ate another bowl of rice.

(4a') ta you chi-le yi-wan fan
 he again eat-PERF one-bowl rice

(4b') ta duo chi-le yi-wan fan
 he more eat-PERF one-bowl rice

(4c') ta duo chi-le yi-wan fan

(4d') ta you chi-le wan mifan

(5') She read all three books.

(5a') ta san-ben shu dou kan-le
 he three-CL book all read-PERF

(5b') ta du-guo-le san-ben shu
 he read-through-PERF three-CL book

(5c') ta du-le quanbu de san-ben shu
 he read-PERF total NOM three-CL book

(5d') san-ben shu ta quan du-le
 three-CL book he all read-PERF

(6') I will visit as many interesting places as possible.

(6a') wo hui jinkaneng duo qu kan you-yisi de difang
 I will as-far-as-possible more/many go look have-interest NOM place

(6b') wo yao fangwen jinkaneng duo-de yixie you-qu de difang
 I want visit nearly-as-possible more/many-ADV some have-interest NOM place

(6c') wo hui jinkaneng qu baifang naxie youqu de difang
 I will as-far-as-possible go visit some-of-those have-interest NOM place.

(6d') wo jiang jinkaneng duo-de qu you naxie jing-dian
 I shall nearly-as-possible more/many-ADV go tour some-of-those scene-spot

(7') The authors offer a rough definition of existentialism.

(7a') zuozhe gei-le cunzaizhuyi dagai de dingyi
 author give-PERF existentialism rough NOM definition

(7b') zuozhemen gei-le yi-ge culue de guanyu cunzaizhuyi de dingyi
 authors give-ASP one-CL rough NOM about existentialism NOM definition

(7c') zuozhe dui cunzaizhuyi geiyu yi-ge jiandan de jieshi
 author toward existentialism offer one-CL simple NOM explanation

(7d') zuozhemen biaoda-le culue de cunzaizhuyi gainian
 authors convey-PERF rough NOM existentialism notion

(8') She resolved the entire matter.

(8a') ta ba shiqing quanbu chuli jieju-le
 she take matter completely process resolve-PERF

(8b') ta jieju-le suoyou de wenti
 she resolve-PERF all NOM question

(8c') ta jieju-le zhe-jian shiqing
she resolve-PERF this-CL matter

(8d') ta jieju-le suoyou de wenti

(9') Many such questions can be listed.

(9a') hen duo zhei-lei de wenti dou keyi lie-chu-lai
very many this-type NOM question all can list-out-come

(9b') xuduo zhei-yang de wenti dou keyi lie-cheng danzi
many this-kind NOM question all can list-become list

(9c') xuduo leisi wenti keyi bei lie-chu
many similar question can PASSIVE list-out

(9d') zhei-lei wenti tai duo le
this-type question too many EMP

(10') He adopted most of Smith's earlier methodology.

(10a') ta caiyong-le da-bu-fen SMITH zaoqi de fangfa
he adopt-PERF most SMITH early NOM method

(10b') ta caiyong-le dabufen shimisi zaoqi de fangfalun
he adopt-PERF most Smith early NOM methodology

(10c') ta jieshou-le dabufen shimisi de zaoqi de fangfalun
he accept-PERF most Smith NOM early NOM methodology

(10d') ta xiqu-le xuduo shimisi zaoqi de lilun
he assimilate-PERF much Smith early NOM theory

(11') We need more study of actual student behavior.

(11a') women xuyao dui xuesheng de xingwei jinxing geng duo de yanjiu
we need toward student ASSOC behavior carry-on still more NOM research

(11b') women xuyao geng duo de yanjiu xuesheng de shiji xingwei
we need still more NOM research students ASSOC actual behavior

(11c') women xuyao dui xuesheng de shiji biaoqian jinxing geng duo de yanjiu
we need toward student NOM actual manifest carry-on still more NOM research

(11d') women xuyao geng duo de guanyu xuesheng xingwei de yanjiu
we need still more NOM about student behavior NOM research

(12') Smith puts more emphasis on the relationship between the two.

(12a') Smith geng qiangdiao liang-zhe zhijian de guanxi
Smith still-more emphasize two-NOM between NOM relationship

(12b') Shimisi geng duo-de zhongshi zhe-liang-zhe zhijian de
Smith still-more more-ADV give-importance-to these-two-NOM between NOM
guanxi
relationship

- (12c') Shimisi dui erzhe zhijian de guanxi you geng duo de guanzhu
Smith toward two-NOM between NOM relationship have still-more more NOM attend-to
- (12d') Shimisi geng zhuzhong liang-zhe jian de guanxi
Smith still-more lay-stress-on two-NOM between NOM relationship
- (13') Autopsies have revealed little evidence of this linkage.
- (13a') jiepou mei-you faxian hen-duo guanlian de zhengju
autopsy not-PERF discover very-much be-related NOM evidence
- (13b') shijian mei-you xianshi zhengming you zheizhong shuofa de zhengju
autopsy not-PERF discover prove have this-type formulation NOM evidence
- (13c') shijian dui zhei-ge lianxi tigong hen shao de zhengju
autopsy toward this-CL relation provide very few NOM evidence
- (13d') huayan bing mei-gei-chu duoshao xiangguan de zhengju
laboratory-test EMP not(PERF)-give-out how-much be-interrelated NOM evidence
- (14') Neither of these findings can explain the observation.
- (14a') zhei-liang zhong diaocha jieguo dou bu neng jieshi suojian xianxiang
these-two type investigate result all not can explain what-is-seen phenomenon
- (14b') zhaxie faxian dou bu-neng jieshi zhe-zhong xianxiang
these discover all not can explain this-type phenomenon
- (14c') zhaxie zhengju bing bu neng jieshi zhe-ge faxian
these evidence EMP not can explain this-CL discover
- (14d') zhaxie faxian dou bu neng shuoming wenti
these discover all not can explain problem
- (15') These factors have almost no effect.
- (15a') tamen jiben mei-you renhe xiaoguo
they basic not-have any effect
- (15b') zhaxie yinsu jihu mei-you renhe xiaoguo
these factor nearly not-have any effect
- (15c') zhaxie yinsu jiben-shang mei-you renhe xiaoli
these factor basic-on not-have any effect
- (15d') zhaxie dou wuguan-jinyao
these all of-no-consequence

As can be seen, the tendency for Chinese speakers to represent quantities and qualities adverbially appears quite strong—especially in light of the fact that the English sentence prompts, by already being adjectival in their representations, should have invited an analogous representation in Chinese, if one were available.

Out of the 15 nouny English sentences, where quantities and qualities are adjectival, 9 sentences were translated into Chinese using adverb for quantities and qualities—e.g., 1' ta jia-cuo-le ren and 2' ta you diu-le yi-ben shu. 4 sentences were

represented with adjectives; and 2 sentences split between adjectival and adverbial representations.

The two split sentences were 8' and 9'—with 8' weighted toward adjectival and 9' weighted toward adverbial. 8b' and 8d' were adjectival: ta jie jue-le suoyoude wenti. 8a' was adverbial: ta ba shiqing quanbu chuli-jie jue-le. The informant for 8c' was agnostic and did not quantify either way. For the 9' sentences, 9a' and 9b' were analyzed as adverbial: hen duo/xuduo zhei-lei de wenti dou keyi lie-chu-lai. In these two sentences, the quantifiers, hen duo and xuduo, are paired with the adverbial, dou. 9c', with the absence of adverbial dou, is analyzed as adjectival: xuduo leisi wenti keyi bei lie-chu. 9d' chose stative verb predicate: zhei-lei wenti tai duo le.

The four sentences that showed up adjectival are 3', 7', 10' and 11'. In 3', 'new teacher' is rendered as xin laoshi. In 7', 'rough definition' is rendered, for example in 7b', as culue de dingyi. In 10', 'most of Smith's earlier methodology' is rendered, for example in 10a', b', and c', as dabufen shimisi zaoqi de fangfalun. In 11', 'more research' is rendered as gengduo de yanjiu. However, here it should be pointed out that all the above adjectival sentences, with the notable exception of 3', include the relativizing particle de (coded NOM, following Li and Thompson (1981)) between the premodifying quantity/quality and the head noun. The presence of de means that in their analysis, these noun phrases exemplify Li and Thompson's notion that adjectival meanings generally belong to the category stative verb. That is, the predicate verbal sense of stative culue in culue de dingyi is preserved as in an adjective clause, 'definition which [is] rough.'

3. Discussion

Although, the evidence presented is merely suggestive, it does show that the tendency toward adverbial representation of quantities and qualities is a persistent one in Chinese. The most interesting outlier is 3', 'new teacher'—rendered adjectivally by all informants as xin laoshi; not as xin-lai de laoshi or even as xin de laoshi. Li and Thompson (1981) explain that de can be omitted when the premodifier and head form a useful category. So, yuan zhuozi, 'round table,' forming a useful category, is fine, but ?yuan de zhuozi is not. Similarly ?shufu yizi, 'comfortable chair,' sounds strange—it does not form a useful category—but shufu de yizi is fine. Discourse factors, of course, should be included in any analysis. For example, descriptive grammars of Chinese would, no doubt, recommend piaoliang de guniang, 'beautiful girl,' as the normal pattern, but if the reference is to a type—as in: ta shi yi-ge piaoliang guniang, 'she is a beautiful girl'—the de can be omitted. A fuller picture about the omission of de—which in this analysis changes the premodifier from a stative predicate inside a relative clause into an adjective—is needed. Prosodic factors will need to be included as well. An analysis of tagged corpus data would be a good next step.

With respect to typology, we would like to suggest that observing how qualities and quantities are represented as parts-of-speech can be a useful parameter when thinking

about natural language typology—particularly if this representation correlates with an accumulation of other well-known features of natural languages such as mass vs. count noun, topic-prominent vs. subject-prominent, \pm pro-drop, \pm tensed, \pm aspectual morphology,

Finally, from a human perspective, one can imagine that there should be some underlying conceptual coherence that would capture the ontology implicit in any accumulation features. Nouny and verby are merely labels that suggest tendencies. How best to characterize such coherence is a problem.

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