

# Problems in the Treatment of dōu "all" in a Transformational Grammar of Mandarin Chinese\*

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This paper first states what are the special restrictions on the use of the Chinese word dōu (都) <sup>1</sup> meaning "all" or "both" and then examines how the use of dōu may be represented in a transformational grammar. In doing this latter, I attempt to make clear that the difficulties encountered are of such a nature that transformational grammar, as conceived up to this date at least, <sup>2</sup> is inadequate to deal with them satisfactorily.

Throughout this paper dōu is spoken of as if it were a single word. Actually it is representative of a small class of words, all of similar meaning, and including such forms as tōngtōng (通通) and chywánbù (全部). This class of words is a subclass of the general class called "adverbs". Adverbs are found between the subject and the verb phrase (verb phrase here being meant to include objects, complements, etc., along with the verb.) Two subclasses of adverbs, sentence adverbs and time words, are found *before* the subject as well, but never dōu.

Chinese adverbs may be subclassified according to the order they are found in when more than one of them is used before the verb phrase. The following subclasses of adverbs all occur before the verb phrase: dōu, sentence adverbs, predicate adverbs, time words, time adverbs, and the negative. <sup>3</sup> The verb phrase itself may begin with an intensifying adverb or an adverb of manner, <sup>4</sup> but these do not need to be discussed in relation to the use of dōu. The formula which gives the order of occurrence for these subclasses of adverbs is

SADV+X+PADV+X+TW+X+TADV+NEG+X+NEG+VB

An "X" is included at any point where dōu may occur. Dōu may occur only once in any one predicate but the choice of position is between any of these points marked "X". There are also certain particular restrictions on what may come between dōu at any one of the points marked "X" and a following negative, but these do not alter the general picture just given and need not be described in detail here.

A difference in the position of dōu within this pattern is paralleled by a difference in meaning. This is clearest if the difference is between the position before, and the position after, the negative. A pair of example sentences are tāmen bu dōu lái (他們都不來) "They're not all coming," and tāmen dōu bu lái (他們都不來) "They all aren't coming" or "None of them are coming". The difference in word order makes for clearly different meanings. Similarly, contrasts in meaning, according to position of dōu before or after an adverb, are found in such pairs as the following: wōmen yíding dōu lái (我們一

定都來) “We certainly all will come” and wǒmen dōu yídìng lái (我們都一定來) “We all will certainly come”; wǒmen dōu měinián chū (我們都每年去) “All of us go every year” and wǒmen měinián dōu chū (我們每年都去) “We go absolutely every year”.

There are two types of semantic variation illustrated by the above examples. In the one, we have variation in what dōu is referring to. For example, if dōu is between subject and time word, it can refer only to the subject, as in the sentence wǒmen dōu sìdiǎnjīng lái hǎo ba (我們都四點鐘來好罷) “We’ll all come at four o’clock, O.K.?” If it comes after the time word, it will refer to the time word, meaning “absolutely every time” if the time word expresses frequency, or meaning “for the whole time” if the time word expresses duration. Wǒ syàwǔ dōu méiyǒu kōng (我下午都沒有空) “I don’t have any free time all afternoon” is an example of this last type. Note that the subject in this example is singular, so that dōu unambiguously refers to the time word. If the subject were plural, the reference would be ambiguous, referring to the time word only or to the subject as well as the time word (but not just to the subject.)

The other type of semantic variation depends on whether dōu precedes or follows a predicate adverb or a time adverb. These adverbs add meaning to, or modify, what follows them, and if the dōu comes after one of them, dōu is included in what is modified by the adverb. But this does not change what it is that dōu refers to. Thus we have the contrast in the pair of examples cited above, wǒmen yídìng dōu lái (我們一定都來) “We certainly all will come” and wǒmen dōu yídìng lái (我們都一定來) “We all will certainly come”. Another pair of examples is wǒmen sìdiǎnjīng tsái dōu dào zhèr (我們四點鐘才都到這兒) “We won’t all have arrived here until four o’clock” and wǒmen dōu sìdiǎnjīng tsái dào zhèr (我們都四點鐘才到這兒) “None of us will have arrived here until four o’clock”. Although the meaning of these two sentences is different, in both dōu refers only to the subject “we”.

Dōu can refer to an object only under special circumstances. Chinese sentences may be analyzed into topic and comment. The topic-comment construction must be distinguished from the subject-predicate construction. A topic may be a subject, and a comment may be a predicate. However, a topic may also be an object, and the comment for this may or may not include the subject along with the defective predicate—defective in the sense that the object is not in the comment. Thus we have bāgwāshān bunéng kàndau (八卦山不能看到) “Pa Kua Mountain cannot be seen from here” in which the object bāgwāshān is topic and the defective predicate bunéng kàndau is comment, and bāgwāshān wǒmen bunéng kàndau (八卦山我們不能看到) “We cannot see Pa Kua Mountain” in which the comment itself consists of the subject wǒmen and the defective predicate bunéng kàndau. It is also possible for the topic to be a subject and the comment itself to be another topic-comment construction, with the object as topic. An example is wǒmen bàujr dōu bukàn (我們報紙都不看) “We never read the newspaper” in which the subject wǒmen is topic and the comment consists of the object bàujr and the defective predicate dōu bukàn. Dōu can refer to an object only when the object is thus found in topic position. If both a plural subject and a plural object precede dōu, there will be ambiguity

as to whether dōu refers to one or the other, or to both of them. For example, nèisye shū wǒmen dōu nyàn le (那些書我們都念了) has three possible meanings: "We all read those books", "We read all those books", and "We all read all those books".<sup>5</sup>

The topic-comment construction does not come into the phrase structure component of a transformational grammar of Chinese.<sup>6</sup> Rather the initial string "S" is rewritten as "Subject+Predicate".

$$S \longrightarrow \text{SUBJ} + \text{PRED}$$

"Predicate" may be rewritten as "sentence adverb plus predicate adverb plus time word plus time adverb plus negative plus negative (all the foregoing elements being optional) plus verb phrase".

$$\text{PRED} \longrightarrow (\text{SADV}) (\text{PADV}) (\text{TW}) (\text{TADV}) (\text{NEG}) (\text{NEG}) \text{VB}$$

This rule must be revised to include dōu. The best place for it seems to be between the two negatives, since they can both occur only if dōu is found between them. This restriction may be indicated by double parentheses: ... (NEG) (DOU(NEG)) ... Written this way the formula means that the second negative can be chosen only if dōu is, but that it need not be chosen even if dōu is.

The question now arises how we can account for the occurrence of dōu in other positions in this pattern. It might seem that all that is necessary is to have a permutation type transformational rule. This rule may be stated as:

$$X + Y + \text{DOU} + Z \implies X + \text{DOU} + Y + Z$$

where: Y is (SADV) (PADV) (TW) (TADV) (NEG)  
Z contains no NEG

Note that if Z contains the negative, that is, if the second negative is chosen, the permutation is not allowed since two negatives may otherwise be left contiguous to each other. It has already been shown, however, that differences of position for dōu involve significant differences in meaning. Recent transformational theory has ruled out allowing a transformational rule to effect such changes in meaning. The semantic relations are to be indicated in the phrase structure and maintained throughout subsequent transformations. So another method of providing for various possible positions for dōu must be sought.

One alternative would seem to be multiple inclusion of dōu in the phrase structure rule which rewrites "predicate". DOU would be written in parentheses at the various points where it may occur. The revised rule would then be

$$\text{PRED} \longrightarrow (\text{SADV}) (\text{DOU}) (\text{PADV}) (\text{DOU}) (\text{TW}) (\text{DOU}) (\text{TADV}) (\text{NEG}) (\text{DOU} (\text{NEG})) \text{VB}$$

Writing the rule in this way raises the problem of how to restrict dōu's being chosen to only one time. A general statement like "dōu can occur only once in a predicate" can only be specified in rules in a clumsy way. The rule for rewriting "predicate" would have to be broken down into several rules, with context restrictions added, as follows:

$$\text{PRED} \longrightarrow (\text{SADV}) (\text{DOU}) (\text{PADV}) \text{VB}_1$$

$$\begin{aligned}
 VB_1 &\longrightarrow \begin{cases} (TW) VB_2 \\ DOU (TW) VB_2 \text{ where } X \text{ in } X+VB_1 \text{ contains no DOU} \end{cases} \\
 VB_2 &\longrightarrow \begin{cases} (TADV) (NEG) VB_3 \\ DOU (TADV) (NEG) VB_3 \text{ where } X \text{ in } X+VB_2 \text{ contains no DOU} \end{cases} \\
 VB_3 &\longrightarrow \begin{cases} VB_4 \\ DOU (NEG) VB_4 \text{ where } X \text{ in } X+VB_3 \text{ contains no DOU} \end{cases}
 \end{aligned}$$

Three new units, Verb phrase 1, Verb phrase 2, and Verb phrase 3, are set up. The rewrite rules for these new units each give two choices. The second is the one where dōu is chosen and in each of these cases the restriction says that dōu can be chosen only if dōu has not previously been chosen. Although writing the rules in this way is possible, it should be obvious that it is far from ideal. Furthermore, these rules would have to be revised to include a restriction on the choice of dōu to contexts where the subject or the time word is of the appropriate type for dōu to refer to. (It is not necessary to spell out the details of this restriction here, but one type of appropriate noun phrase is a plural one.) This further complication makes the repetition of the context restrictions even more objectionable.

Another possible treatment would be to allow more than one dōu to be chosen in the phrase structure component and then have all but one deleted by an obligatory transformational rule. But this possibility is ruled out since choice of more than one dōu will result in semantic clashes in the phrase structure and there would be no way of knowing which dōu not to delete by the transformational rule. To allow for different possible deletions, one would need a separate rule for each position where dōu is to be left undeleted. But if this is done, no one of the rules would be obligatory, and one might then end up with more than one dōu.

Any dōu's that would be produced by the phrase structure or transformational rules discussed so far would refer to the subject or to a time word, not to an object. The object which appears in topic position must be produced by a permutation type transformational rule which transposes the object from its postverbal position in the phrase structure. It would seem fairly simple to add the dōu that refers to the object after the transposition. However, additions of this sort are no longer allowed in transformations; all elements must appear in the phrase structure. It would be necessary, then, to add a dōu<sub>2</sub>, one which refers to the object in contrast to one that does not, at every point where we already have dōu. If dōu<sub>2</sub> is chosen, the transformation transposing the object would be obligatory.

Setting up two dōu's raises several problems. For one thing, the context-restrictions which limit the occurrence of dōu to one time must be revised to refer to previous occurrences of both dōu's, thus becoming even more complicated. If we use this method to avoid having two dōu's appear, for example, after a sequence of "plural object plus plural subject", the one dōu is either dōu<sub>1</sub>, meant to refer to the subject, or dōu<sub>2</sub>, meant to refer to the object. There would be no possible third alternative, namely, that dōu refers to both subject and object. Yet this is one of the possible meanings of such an ambiguous pattern. The only way to provide for this third possibility is to allow both dōu's to be

chosen in the phrase structure and then obligatorily replace them by a third dōu, one that refers to all and any preceding plural noun phrases. This is obviously objectionable, since, first of all, it means the introduction again of a new element in the transformational rules rather than in the phrase structure rules, and, secondly, it sets up a third dōu, dōu<sub>3</sub>. Apart from the requirements of the transformational model of a grammar, there is no good reason for setting up two distinct dōu's, to say nothing of three. Dōu is always found in basically the same position in derived sentences, so that from the point of view of derived structure there is no *formal* justification for distinguishing two dōu's. And the *function* of this dōu in every occurrence can be generally stated as having reference to a preceding noun phrase or time word. Certainly the native speaker intuitively recognizes only one dōu.

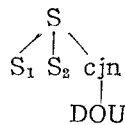
There is a further complication that a transformational grammar involves us in, which needs to be mentioned now. One of the types of noun phrases to which dōu may refer is produced only by a transformation. We have this kind of noun phrase in the topic of the sentence jèiběn shū nèiběn shū wǒ dōu bu syǐhwan (這本書那本書我都不喜歡) "I don't like either this book or that book". The topic consists of two co-ordinate noun phrases, "this book", and "that book". If a generalized transformation rule were used to conjoin two sentences and so generate this kind of co-ordinate topic, the dōu would have to be added afterwards. But both the use of conjoining transformations of this type and the addition of new elements in a transformation are now avoided by transformationalists. So Professor William S-Y. Wang of Ohio State University proposed a different solution in a paper at the 1964 summer meeting of the Linguistic Society of America. An element "cjn" is introduced along with "S<sup>n</sup>" in the phrase structure rule rewriting "S".

$$S \longrightarrow S^n + cjn$$

If the "S<sup>n</sup>" is rewritten so that, after the necessary transformations, we end up with a conjoined subject or a conjoined transposed object, then "cjn" is rewritten as dōu. Several objections can be made to this solution, but there is one in particular that can be emphasized. It is that there is something wrong with a grammatical description which introduces a single item in two entirely different places in the phrase structure, especially when the end result is an identical function for that item. This is the situation as proposed in Professor Wang's paper. On the one hand, dōu is a subclass of adverb and thus a part of the node "predicate".



A sentence in which the subject is a simple noun phrase such as jèi lyǎng jǐng dāngsī dōu hěn gwèi (這兩種東西都很貴) "These two kinds of things are both very expensive" would be derived in this way. On the other hand, dōu may also be a part of, or dominated by, the node "cjn" which itself is part of the node "S".



A sentence in which the subject is a conjoined noun phrase such as jwōdz yīdz dōu hěn gwèi (棹子椅子都很貴) "The tables and the chairs are both very expensive" would be derived in this latter way. Yet there is a distinct parallelism between the uses of the dōu's of these two sentences which demands a simpler and more unified treatment of dōu than a transformational grammar seems able to provide.

The basic difficulty in the treatment of dōu is that, formally, it is part of the predicate (the meaning of which may vary according to the position in the predicate that dōu comes in) and dependent on the verb phrase, but that, semantically, it is tied up with a noun phrase which may be subject or object, or with a time word. If the structure of the grammar could be such that the inclusion of dōu in a sentence depended on one choice at a stage where this could be done *after* the topic had been chosen, then the description would, at least as far as dōu is concerned, be much simpler. To provide for this by reverting to an immediate constituent type of grammar would be to lose all the advantages of recognizing both the surface structure and the deep structure relations between elements in a sentence. It may be worthwhile to investigate whether a stratificational theory of grammar<sup>7</sup> can provide an adequate model for describing this aspect of Chinese grammar. Such an investigation has not been made yet but it seems possible that in the semological subcode the network structure could provide for the complexity of the relations between dōu and other elements in the sentence but at the same time require a decision on the inclusion or exclusion of dōu at only one point. By semolexic realizational rules the simple tree structure showing immediate constituent relation between topic and comment, between subject and predicate, and between dōu and verb phrase, could then be mapped out. It is valid and necessary to distinguish between the kind of relationship that dōu has to other elements in the sentence at a deep structure level, and the kind of relationship it has at the surface structure level with the other parts of the predicate and, indirectly, with other elements such as the topic. But the distinction between these two kinds of relationships evidently does not correspond to the difference between the relationships of elements in the phrase structure component of a transformational grammar and the relationships allowed in the derived phrase markers of the transformational component.

### Notes

\*A paper presented at the Southern New England Linguistic Conference, Hartford, Connecticut, November 14, 1964.

1. The Yale system of romanization is used in this paper.
2. For an introduction to transformational grammar, see Emmon Bach, *An Introduction to Transformational Grammars* (New York: Holt, Rinehart and Winston, Inc., 1964.) For most recent formulations of the theory see Jerrold J. Katz and Paul M. Postal,

*An Integrated Theory of Linguistic Descriptions* (Cambridge, Mass.: The M. I. T. Press, 1964) and Jerry A. Fodor and Jerrold J. Katz, *The Structure of Language: Readings in the Philosophy of Language* (Englewood Cliffs, N. J.: Prentice Hall, Inc., 1964.)

3. Examples of words for these classes are as follows. Sentence adverbs: *yěsyǔ* (也許) "probably", *chíshí* (其實) "actually", *dāngrán* (當然) "of course"; predicate adverbs: *yídìng* (一定) "certainly", *jān (de)* (真(的)) "really", *jywédwèi* (絕對) "absolutely"; time words: *jīntiān* (今天) "today", *yǐhòu* (以後) "afterwards"; time adverbs: *hái* (還) "still", *yòu* (又) "again", *tsái* (才) "then and only then", *jiù* (就) "then". The negative is *bu* (不). In a transformational grammar *méi* (沒) is derived from *bu* by transformation.
4. *hěn* (很) "very" and *dzwèi* (最) "most" are examples of intensifying adverbs; *yítóng* (一同) "together" and *jwānmén* (專門) "specially" are examples of adverbs of manner.
5. This example is taken from Charles F. Hockett, "Chinese Versus English: an Exploration of the Whorfian Theses" in Harry Hoijer, ed., *Language in Culture* (Chicago: The University of Chicago Press, 1954,) p. 115.
6. For an early formulation of a transformational grammar of Chinese, see W. S-Y. Wang, "Some Syntactic Rules in Mandarin," *Project on Linguistic Analysis, Report No. 3r* (Columbus, Ohio: The Ohio State University Research Foundation.)
7. See the following two articles in C. I. J. M. Stuart, ed., *Report of the Fifteenth Annual (First International) Round Table Meeting on Linguistics and Language Studies*, No. 17 (Georgetown University Press, 1964): H. A. Gleason, Jr., "The Organization of Language: A Stratificational View" and Sydney M. Lamb, "On Alternation, Transformation, Realization, and Stratification." Also see Lamb, "The Sememic Approach to Structural Semantics," *American Anthropologist*, Volume 66, Number 3 (June, 1964), Part 2, pp. 57-78.

## 從變換律語法來看國語都字之用法

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在一個中文句子中，“都”字往往出現在動詞之前，如果句中有主部，則在主部之後。但是它的位置可因動詞前面的其他副詞而有所改變，隨著這種位置的改變而產生意義上的不同。“都”字常常是用以說明它前面的名詞詞組 (noun phrase) 一即句中的主詞或移位受詞 (transposed object) 一或時間語詞 (time word)。因此就表面結構 (surface structure) 而言“都”只跟在它後面的述語 (predicate) 有直接的關聯，但就深層結構 (deep structure) 而言“都”字跟在它前面的主詞，受詞或時間語詞也有所關聯的。這種表面結構與深層結構間的差異是跟變換律語法 (transformational grammar) 中詞組結構成分 (phrase structure component) 與變換成分 (transformational component) 間的差異相似的。本文即先討論到變換律語法中幾個可以造出帶有“都”字句子的方法，然後結論說這些方法都不適當。最後作者提出層次語法 (stratificational theory of grammar)，以為這種理論或許能夠提供所需要的結構並恰當地說明這部份的中文語法。