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### Shorter articles and notes the interpretation of the passive voice

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## SHORTER ARTICLES AND NOTES

## THE INTERPRETATION OF THE PASSIVE VOICE

BY

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It was hypothesized that sentences in the passive voice emphasize the importance of the things referred to by their grammatical *subjects* to a greater extent than sentences in the active voice. Each subject had to produce simple diagrams to represent two sentences, one active and one passive, and it was assumed that the size of areas in these diagrams could be taken as an index of importance. In Group EQ, the sentences specified an equivalent arrangement of colours, e.g. "Red follows Blue," "Blue is followed by Red"; in Group CO, they specified converse arrangements, e.g. "Red follows Blue," "Red is followed by Blue." The predictions, that (i) the *subjects* of all sentences would tend to be represented as larger than the *objects*, and that (ii) the *subjects* of passives would be represented as larger than those of actives, were confirmed.

## INTRODUCTION

Does the passive mean the same as the active in English? Some linguists claim that it does, e.g. Katz and Postal (1964), and others, e.g. Chomsky (1957), that it does not. McMahon (1963) and Slobin (1966) have shown that the passive is harder to understand than the active; and so, since the passive has not fallen into disuse, it is sensible to question whether it exists for merely stylistic purposes. The passive reverses the order of the grammatical *subject* and *object* of the active, and it also allows the active *subject* to be omitted altogether, e.g. "The plot was discovered." It seems, therefore, that one use of the passive is to emphasize the relative importance of whatever is referred to by its *subject*. The passive is chosen when its *subject* refers to a more predominant entity than its *object*, and this difference is sufficient to justify the presumably greater effort its production demands. It follows that the active is used when its *subject* predominates or when there is little difference in the importance of the entities denoted by *subject* and *object*.

If this hypothesis is true, then it will also apply to the way sentences are interpreted. The task in the present experiment was interpretative: the subjects had to illustrate two sentences by simple diagrams. On the assumption that the size of the areas representing *subject* and *object* provides an index of importance, it was predicted:—

- (i) The *subjects* of the sentences would be represented by larger areas than their *objects*.
- (ii) This difference would be greater for passives than for actives.

## METHOD

*Task.* The subjects were given a slip of paper on which were drawn two long narrow rectangles, and their task was to illustrate two sentences by colouring the rectangles with crayon. Their attention was engaged by instructing them that "somebody else" would have to be able to match the diagrams with the appropriate sentences.

*Design.* Two Groups were used in order to vary the degree to which subjects would be likely to search explicitly for a difference in meaning between the two voices. Group EQ received an active and a passive sentence which referred to *equivalent* arrangements of colours:—

- (1) Red follows Blue.
- (2) Blue is followed by Red.

Group CO received sentences which referred to *converse* arrangements of colours.

- (3) Red follows Blue.
- (4) Red is followed by Blue.

In Group EQ, the task was intended to elicit a difference in meaning between the two voices: subjects would be forced to try to externalize the "rules" governing the usage of the active and passive. In Group CO, on the other hand, the task was intended to detect any implicit reliance upon such "rules." It was accordingly predicted (iii) that the difference in *subject* area between actives and passives would be greater in Group EQ.

Although each subject received only a single pair of sentences, these pairs were systematically varied to balance a number of factors. (a) In order to control for any directional effect inherent in the verb, half the pairs used the verb "follows" and the other half used "precedes." (b) All the pairs referred to arrangements of red and blue, but they were counterbalanced so that for each pair there was another pair which referred to the opposite arrangement of colours. (c) The order of the two sentences on the card was also balanced. Hence, there were eight different pairs for each of the two Groups, and subjects were allocated in rotation to them.

*Procedure.* Each pair of sentences was typed in capitals on a slip of paper (8 in.  $\times$   $\frac{3}{4}$  in.), and the two rectangles, 5 in.  $\times$   $\frac{3}{4}$  in., were drawn one beneath the other on another slip (8 in.  $\times$  2 in.).

The subjects sat at a table on which were the materials, including a red and blue crayon. They were given the following written instructions:—

"There is in front of you a pair of sentences that you must regard as different though similar messages. Your task is to produce two drawings—by filling in the strips with crayon—so that the first drawing represents the first sentence and the second drawing represents the second sentence. Try to produce a pair of drawings such that, if they were given to somebody else, then he could correctly match the drawings with the sentences that they are meant to convey."

"Each drawing must entirely fill in its strip—so do not leave any blanks; and the join between the two colours must be a sharp vertical line—so do not use any arrows, etc."

This second paragraph was introduced after pilot studies to eliminate some of the more bizarre solutions. Similarly, it was decided to allow subjects to have both strips in view throughout.

*Subjects.* The data were provided by 32 undergraduates (16 male and 16 female) in the Department of Psychology, University College London. They were all native-speakers of English and ignorant of the purpose of the experiment. (Five subjects failed to obey the instructions and were replaced by others.)

## RESULTS

The mean lengths in inches of the areas representing the *subjects* of the sentences are given in Table I; the total length of each strip was 5 in. The results for the two different

TABLE I  
MEAN LENGTHS IN INCHES OF SUBJECT AREAS

Groups	Type of sentence		Overall
	Active	Passive	
Group EQ.. .. .	3.0	3.5	3.2
Group CO.. .. .	2.7	3.0	2.8
Overall .. .. .	2.8	3.2	3.0

verbs were combined as the difference between them was insignificant. The measures involved in predictions (i) and (ii), though independent in sign, are not independent in magnitude.\* Hence, nonparametric tests were used throughout.

\* The author is indebted to R. J. Audley for this observation.

Table II shows the number of subjects whose mean *subject* length, computed from the active and passive drawings, was larger (or smaller) than mean *object* length. A Wilcoxon

TABLE II  
NUMBER OF SUBJECTS WHOSE MEAN *SUBJECT* LENGTH WAS LARGER (OR SMALLER) THAN MEAN *OBJECT* LENGTH

<i>Groups</i>	<i>Larger</i>	<i>Smaller</i>	<i>Total</i>
Group EQ .. ..	11	5	16
Group CO .. ..	10	6	16
Total .. ..	21	11	32

test on the combined data from both Groups was significant ( $p < 0.0005$ , one-tail). Prediction (i), that the *subjects* of sentences would be represented by larger areas than the *objects*, was therefore confirmed.

Table III shows the number of subjects who made their passive *subject* larger (or smaller) than their active *subject*. There was one tie in CO. A Wilcoxon test on the

TABLE III  
NUMBER OF SUBJECTS WHOSE PASSIVE *SUBJECT* WAS LARGER (OR SMALLER) THAN ACTIVE *SUBJECT*

<i>Groups</i>	<i>Larger</i>	<i>Smaller</i>	<i>Total</i>
Group EQ .. ..	12	4	16
Group CO .. ..	9	6	15
Total .. ..	21	10	31

combined data from both Groups was significant ( $p < 0.02$ , one-tail). Prediction (ii), that the difference between *subjects* and *objects* would be enhanced for passives, was therefore confirmed.

Although the trend was in the direction of prediction (iii), that the difference in *subject* area between actives and passives would be greater in EQ, a Mann-Witney test on the difference between the two Groups was not significant.

It is feasible that those subjects who conformed to prediction (i) would conform to prediction (ii). Table IV is the appropriate contingency table derived from the combined

TABLE IV  
CONTINGENCY TABLE OF NUMBERS OF SUBJECTS CONFORMING (AND NOT CONFORMING) TO PREDICTIONS (i) AND (ii)

	<i>Passive subject larger</i>	<i>Active subject larger</i>	<i>Total</i>
Mean <i>subject</i> larger .. ..	16	4	20
Mean <i>object</i> larger .. ..	5	6	11
Total .. ..	21	10	31

data of both Groups. It is evident that there is some correlation, but it was not significant on a Kendall Rank Correlation test for two dichotomies.

There was a tendency, as can be seen in Table I, for *subjects* to be represented by larger areas in EQ than in CO. This was unexpected, but it was not significant on a Mann-Witney test.

### Qualitative results

The "tactics" adopted by the subjects in EQ were relatively uniform. Of the 12 subjects who conformed to prediction (ii), (a) eight made the *subjects* of both statements larger than the *objects*, with passive *subjects* larger than those of the active; and (b) four divided the strip almost equally for the active but made the passive *subject* larger than its *object*. One subject adopting the latter tactic claimed that the passive reversed the direction implied by the active, and his diagrams resemble those of a subject in CO. Of the four subjects who did not conform to prediction (ii), two adopted tactic (a) and one adopted tactic (b), but in these cases the active was illustrated by the diagram appropriate to the passive, and the passive by the diagram appropriate to the active. The remaining subject illustrated the active by dividing the strip into two equal areas, and the passive by placing an area of the *subject* colour in the middle of the strip surrounded on both sides by the *object* colour.

The subjects in CO tended to represent the *subjects* of both sentences by slightly larger areas than the *objects*. Of the 10 subjects who did so, four conformed to prediction (ii), five did not conform, and one made the two areas equal. Another "tactic" was to divide both strips at the same place and to colour them appropriately. This yielded two out of three results conforming to prediction (ii). Of the remaining three subjects, whose results were all in accord with prediction (ii), two adopted strategy (b), and one represented both sentences by a series of vertical bands of colour, with more bands of the *subject* colour for the passive.

The majority of introspective reports were unrevealing. A few subjects in EQ came near to expressing the basic hypothesis.

### DISCUSSION

The confirmation of the two main predictions supports the basic hypothesis, which is unaffected by the failure to confirm the subsidiary prediction. However, there are three points which must be considered. Firstly, the experimental sentences used only two verbs which stand in the relatively rare relation of denoting the converse of one another. The use of the passive to emphasize importance is perhaps less likely to occur when this emphasis could be achieved by using an alternative verb in the active voice; this would suggest that the use of these verbs makes an especially stringent test of the hypothesis. Secondly, the *subjects* of the pairs of sentences in EQ referred to different colours, whereas in CO they referred to the same colour. This imbalance is likely to have affected performance only in relation to the subsidiary prediction. It could have been controlled by using "mixed" pairs, i.e. one sentence with "follows" and the other with "precedes." But this was considered to be premature, since subjects might have exploited differences between the verbs themselves rather than between the two voices. Thirdly, the slight tendency for *subjects* to be represented by larger areas in EQ than in CO may have been due to a need to emphasize them in EQ in order to differentiate the diagrams. Any such tendency in CO would be merely an auxiliary aid, since the diagrams are differentiated by their opposite allocations of colour.

This experiment has shown that a passive sentence does not necessarily refer to exactly the same thing as its corresponding active. But this difference in reference must be mediated by a difference in meaning. If differences between *subject* and *object* areas can be taken as an index of predominance, then the basic hypothesis is substantially confirmed. Is the difference anything more than one of emphasis? Consider the sentence "Everyone knows some songs." This would normally be understood to mean that the songs were not necessarily the *same* ones for everyone. On the other hand, the sentence "Some songs are known by everyone" would normally mean that it *was* the same songs that were known. How are we to account for what Chomsky (1957) terms the "normal interpretation" of sentences like these? Clearly, it is due to word-order and in particular to the order of the two quantifiers "everyone" and "some." This order conveys which of the two quantifiers is the predominant one—which quantifier does the "binding" as the logicians term it. It is the effect of voice on word-order that is crucial rather than anything else, as is evident from the complementary examples, "Every song is known by someone" and "Someone knows every song."

The notion of predominance (or importance), ill-defined as it is, obviously involves the socio-physical setting and linguistic context of an utterance—factors which will have to be taken into account by any semantic theory. What is predominant depends on who you are, where you are, what you are doing, what you are talking about and to whom you are talking.

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