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# *The Substitution Table*

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THE SUBSTITUTION TABLE is an established teaching device, perhaps rather taken for granted. This article attempts a review of its linguistic context, its formal aspects, and its use in the classroom.

Our first need is a specimen. Here is part of a table presenting a very common construction:

| | | | | | |
|---|---|---|---|---|---|
| He<br>She<br>Charles<br>The mechanic | intended<br>decided<br>wanted<br>refused | to | leave<br>go<br>start<br>arrive | early<br>punctually<br>at six o'clock<br>the following day | . |

*Table 1*

Taking any item from the column on the left, then any item from each subsequent column in turn, we make an acceptable sentence. The number of different sentences one can construct from a table is calculated by multiplying the numbers of alternatives in the various columns; in the specimen, $4\times4\times1\times4\times4\times1$, or 256.

#### The substitution process

A substitution table visibly exemplifies the concept of substitutability: that a sentence has 'places' from start to finish (from left to right), and that at various 'places' other grammatically controlled items could take the place of the item already there.

When we construct a substitution table, we multiply the pattern of an originating sentence, deriving the substitutable items *by association*. Suppose that the model sentence of Table 1 is given: *He intended to leave early*. We think of other subject-place words or word-groups: *I, She, The mechanic*, etc. Substitutes for *intended* then come to mind: *decided, wanted, refused*, etc. The third column has one item only, and it cannot be replaced. It is the pivot, the 'structural word' of the construction, and keeps its identity when we reduce the table to a formula: Subject+finite verb+*to*+verb stem. Substitution resumes in the fourth and fifth columns.

In this way, the various 'places' are represented by vertical columns of alternatives. At the same time, the table presents horizontally a set of sentences formed from consecutive items.

That is, a substitution table exhibits the twin aspects of language which de Saussure took to be the substance of linguistic study.

### Presentation for analysis and for practice

Now the visual presentation necessarily *includes* the aspect of substitutability; but it *accentuates* this aspect if the columns are separated by vertical lines, as they are in Table 1, and in many published tables.

In a grammar lesson this may be what we want, to emphasize the formal similarity of items in a column, and the column to column relationships. However, if we want the table simply for practice, we realize that the lines are visual *bars* to reading fluency, and dispense with them. The previous table now appears as:

| | | | | |
|---|---|---|---|---|
| He | intended | | leave | early |
| She | decided | to | go | punctually |
| Charles | wanted | | start | at six o'clock |
| The mechanic | refused | | arrive | the following day |

*Table 2*

### More presentation features

It may happen that we wish to include an item without making its use obligatory. We do this by bracketing it:

| | | | | | |
|---|---|---|---|---|---|
| What | do | you<br>they | (usually) | do | in the evening<br>in the summer<br>at the weekend |

?

*Table 3*

We may wish to indicate alternative places as well as alternative items. For instance, we may be dealing with two adverb positions. Numbering the columns allows us to give the appropriate instruction:

| 1 | 2* | 3 | 4* | 5 |
|---|---|---|---|---|
| We<br>They | often<br>rarely<br>hardly ever | go there<br>eat fried food<br>have it | every day<br>regularly<br>very often<br>very rarely | . |

* Use an item *either* from Column 2 *or* from Column 4.

*Table 4*

Often it is economical to bring into one column items which, while comparable in function, are not actually substitutable. Before *intended*, any subject pronoun may appear: *I* intended . . . *You* intended . . . etc. Before the comparable *was*, only the first and



third person singular pronouns may be used; yet it would seem unreasonable to write out a table twice so as to include both *was* and *were* in our practice material. The difficulty is overcome by placing a horizontal bar to indicate that substitution is allowed only among items on the same side of the bar, or, if need be, between bars:

| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| He<br>She | was | able<br>unable<br>sure<br>etc. | to | come<br>etc. | . |
| We<br>They | were | | | | |

*Table 5*

The horizontal bar may appear in more than one column:

| 1 | | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| What<br>Where | do | you<br>they | (usually) | do<br>go | on rainy days<br>on Saturdays<br>on Saturday afternoons<br>on fine afternoons | ? |

*Table 6*

In this way *What* is confined to association with *do*, *Where* with *go*.

Extension of tables in this manner should not be overdone. For instance, it would not be wise to illustrate the use of a tense with a single table for positive and negative statements and questions. This is how such a table would appear:

| | | | | | | |
|---|---|---|---|---|---|---|
| He<br>I | intended<br>decided<br>wanted<br>refused | | | leave<br>go<br>start<br>arrive | early<br>punctually<br>at six<br>on Sunday | . |
| | didn't<br>did not | intend<br>decide<br>want<br>refuse | to | | | |
| Did<br>Didn't | he<br>I | | | | | ? |

*Table 7*

### Form and meaning

Table 7 is clumsy, an immediate practical objection. But it is objectionable for a theoretical reason too. It gives the impression that the relationship between statement and question is entirely formal. This is the kind of over-simplification which in school courses 'derives', transformationally, *Have we water in our cups?*, *Had he his hat?*, and the like from quite ordinary sentences; and

proceeds to drill these absurdities to the same extent as the ordinary sentences. Table 7 does similar injustice to the language when it parallels *He intended to go/He didn't intend to go* and *He decided to go/He didn't decide to go*. This last sentence is probably as rare as *Had he his hat?*. It does more than negative the preceding one; for it contains the implications of distinction between *He didn't decide to go* and *He decided not to go*.

Of course, the negative question word-order and the parallel exclamation have characteristic intonations which fit characteristic contexts and go together with characteristic vocabulary. It is tempting to wish to establish several constructions with a small supply of words, feeling that one is concentrating on essentials (the 'structures'), and the substitution table offers maximum temptation. It is a false economy.

The interdependence of form and content may be shown with the substitution table pattern of Table 1, Subject+finite verb+*to* +verb stem. The table appears below without formal change, but with different items in Column 4:

| 1 | 2 | 3 | 4 | | 5 |
|---|---|---|---|---|---|
| He | intended | | do | | |
| She | decided | to | discuss | it | . |
| The mechanic | refused | | consider | | |
| I | wanted | | examine | | |

*Table 8*

Suppose now we extend Column 2 with *hesitated, started, ceased* . . . The construction remains unchanged. However, suppose we add *stopped* or *paused* . . . ? We discover that *He started to consider it* and *He stopped to consider it* do not differ by one word in one place; they are so different that we suspect a different construction; and indeed we find we can make a distinct table:

| 1 | 2 | 3 | 4 | | 5 |
|---|---|---|---|---|---|
| He | stopped | (so as to) | discuss | | |
| She | stayed | to | do | it | |
| The mechanic | paused | in order to | consider | | |
| I | lingered | | examine | | |

*Table 9*

Under Column 3 in Table 9 appear items which could not appear under the same column number in Table 8, and we may conclude that the *to* is not the same. Moreover, items from the first three columns in Table 8 form groups, which could be used to follow up previous reference: *I intended to, She refused to*. In Table 9 any break would have to occur after Column 2: *We stopped, We paused*. It seems that in Table 8 the *to* is linked with the preceding finite verb of Column 2, whereas in Table 9 a different *to* is linked with the following non-finite plain stem of Column 3.



**A presentation refinement**

If we do not use vertical lines, substitution tables may be made to show to some extent the kind of segmentation which is implicit: in the present examples the *to* may be moved left or right into physical nearness with the items with which it is linked; and may share a column number:

| 1 | 2 | | 3 | | 4 |
|---|---|---|---|---|---|
| He | intended | | discuss | | |
| She | decided | to | consider | it | . |
| I | started | | examine | | |

*Table 10*

| 1 | 2 | | 3 | | 4 |
|---|---|---|---|---|---|
| He | stopped | | discuss | | |
| She | walked over | to | consider | it | . |
| I | paused | | examine | | |

*Table 11*

This is as far as substitution tables can go in indication of relationships among items horizontally, that is, in temporal succession. The paradox of the substitution table is that the *presentation* gives prominence to the vertical columns, but its main *use* is for the production of words in sequential relationship.

Unfortunately the paradox is not merely an intriguing observation. When a teacher has set out a table like Table 1, he has, knowingly or otherwise, suggested a consistent relationship among the items of Columns 2, 3, and 4. Let us suppose a learner has registered the relationship. Subsequently he encounters one item from column 2 followed by a different link word: *He decided that* . . . With the association already there from the vertical columning, and the two patterns now side by side, we cannot be surprised at the extension: *He decided to . . . He decided that he . . . He intended to . . . He intended that he . . . He wanted to . . . He wanted that he* . . . Nothing in our presentation has enabled the learner to know that whereas in *He decided that he* . . . the second *he* is most likely identical with the first, in *He intended that he* . . . the second *he* is most unlikely to be identical with the first, and that *He wanted that he* . . . is not acceptable English. Since the vertical associations do not enable one to know the horizontal associations, the learner still has to know for each verb as an individual vocabulary item whether or not it can be followed by

*to*+stem (*I liked to do it. I disliked . . .*), by stem+-ing (*He liked to sing. He liked singing. He wished to sing. He wished . . .*), by a clause, by a plain stem.

The substitution table gives copious experience of particular items in particular contexts; its appearance should not mislead us into thinking that it does more than it can do. Adequate coverage of any language area requires a large number of overlapping substitution tables, and a fairly extensive vocabulary.

### The substitution table in use

The foregoing paragraphs have shown the theoretical interest of the substitution table and the degree of flexibility in presentation one can attain. Its unique advantage to the teacher is that it allows the production of large numbers of similar, and above all, correct sentences; its weakness, that it has small built-in incentive. In practical use of the substitution table, we must exploit its advantage and attempt to compensate for its deficiency.

### The private student

A good advanced student one assumes to be motivated by previous progress, to have persistence, and to be willing to keep alert. Advice to him will be directed to countering any tendency to mechanical construction. He can be exhorted to be conscious of the meaning of each sentence he forms. He can be advised to stop at intervals, to try to recall and write the items from this or that column; or to check in the dictionary the meanings of all the words and phrases; or to imagine contexts in which each sentence could occur.

### Classroom use—construction

The apparent simplicity of the substitution table should not tempt a teacher to try constructing one impromptu in the classroom: he will indeed be lucky if he escapes discomfiture. It is really difficult to keep one's attention simultaneously on the blackboard, the pupils, and *all* the sentences made possible when one adds an item, for the acceptability of the addition depends not only on its being formally suitable but also on whether its meaning allows it to fit into context: something that cannot be assumed, but must be checked. It is better to do the checking oneself than have thirty or forty pairs of eyes doing it in class! The exception to going with one's table prepared beforehand is that with an advanced class it can be instructive to make the elaboration of a table a class undertaking; the teacher receiving suggestions and considering them, with the class, for inclusion in a table developing on the blackboard. In this way, both the work of construction and the amusement at any mistakes are shared.



### Classroom use—the blackboard

It is an elementary observation, often neglected, that a substitution table *appears* on the blackboard. The teacher may intend it for oral practice, but ought to be aware of it as a *visual* presentation.

Obviously, it should be well spaced: it is annoying to leave a margin on the left, and then find there is insufficient room for the final column, which has somehow to be squashed in. Until a teacher has an eye for the placing of a table as a whole, it is a good plan to estimate the lengths of the longest columns and put guide marks on the blackboard before beginning to write. Very long items may have to be excluded from a blackboard version of a table, and a table from a book will probably need to be abridged. The teacher must not hesitate about excluding items. In blackboard work, legibility and distinctness of column separation must have priority.

A visual impression is left with every sentence formed from a table, even when the sentence is spoken. It follows that learners should see the full stop (or question or exclamation mark), which requires, and deserves, a column to itself: it requires one, for the teacher's example is particularly likely to get followed when this is unwanted, and it deserves one, for it is an intonation guide.

### Classroom use—practice procedure

Once the table is on the blackboard, the first requirement is that the learners become familiar with it; they should not be asked to construct sentences until they can do so without halting at the columns. The teacher must first overcome the interference of the vertical patterning with the production of unbroken sentences. He begins, reading slowly and choosing sentences which are easy to follow, and gradually increases speed and range of choice. When he judges that the table is fairly well known, he calls out a good pupil. As he reads, the pupil follows his sentences across the blackboard with a pointer. After more practice with pupils following, and further increase of speed, he appoints a pupil to take his place. Ten to twenty minutes' oral practice is enough.

There are variant techniques. For instance, placing a pointer on one word and reading aloud another word the teacher controls two columns, and has a hand free to indicate who is to make the sentence, the selected pupil having freedom to choose among items in uncontrolled columns. This can be a very lively exercise. Another way is for the teacher to read a sentence, then say any substitutable word from any column, at the same time pointing to a pupil, who has to incorporate that word into the sentence. The pupil then adds his 'own' word, immediately he has spoken the changed sentence, and points to another pupil:

Teacher: *He refused to go.* (pointing to a pupil) *leave*
Pupil: *He refused to leave.* (pointing to another pupil) *decided.*
Second pupil: *He decided to leave.* (pointing to a third pupil) *start*, and so on.

Varied practice techniques are appreciated, especially in classes where substitution tables are regularly used, and already 'known' tables, in duplicated or printed form, are frequently practised for a few minutes each.

**Classroom use—written work**

The substitution table permits the formation of large numbers of *correct* sentences, so there should be no hesitation over written assignments. In many of the world's classrooms, the amount of written work the learners do is governed, not by what they need, but by what the teacher can mark. With substitution tables, there is no need for marking; a very short time is required for supervision of what goes on. If sets of tables are used, the teacher can, at any time, send a learner who has not mastered some feature of the work to the appropriate table, and say cheerfully 'Fifty!' It is necessary, however, that the teacher should explain frequently and carefully why such written work is set, and how it should be done. Otherwise the learner may work on a substitution table as though it were an imposition, copying so many items from the first column, then from the second, and so on. It has to be explained that this is a waste of time; that the only reason for the written work is need for the repeated production of sentences after a pattern, so that the pattern is remembered. The learner has to realize that he is doing the assignment in order to learn for himself, not to produce a result for the teacher.

It is no small advantage either, to have in one's desk the means of keeping an individual pupil or a small group of pupils *safely* occupied for any odd amount of time. Spare tables, duplicating known patterns, but using a more advanced, or more amusing, vocabulary are an excellent investment.

Many teachers dislike substitution tables, assuming them to be difficult to handle, mechanical, and dull. A substitution table does need careful construction, and careful presentation. It is a mistake, however, to think that substitution table drill need ever be dull; on the contrary, it is indeed very easy to keep a whole class alert and active. The teacher's voice being hardly used, once the table is familiar, pupil participation is near maximum; there is virtually no interruption for correction; and all in all essential repetition could hardly be made more brisk, stimulating, and satisfying.