

THE CONDITIONS OF VERBAL CONFIGURATION

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Advocates of the gestalt conception have pointed out that a configuration does not arise equally easily under all conditions. Thus we are told that the ape sees a branch more readily as a tool for reaching when it is not attached to a tree but is instead detached from this structure and lying 'loose' on the ground. And the problem situation 'closes' upon the stick as such an implement more easily if the stick lies between the animal and the goal, or if stick and goal are close together in visual space. Similar observations have been made in the case of young children, and in the case of idiots.

Now words would seem to be configurations *par excellence*. It was early shown that words are identified as *wholes* or as *forms* about as easily as are their component letters. The total form may *carry meaning* even when the separate letters are not all clearly discerned. Indeed, missing letters are *supplied*, which would appear to be a neat example of 'closure.' And wrong letters are mis-read, errors in spelling overlooked, which would seem to illustrate the contention that it is the whole that determines the part.

If words are typical configurations, as they appear to be, we might then expect that word building would be a process which would neatly exemplify the various laws of configuration, and the conditions under which configuration most readily occurs. In the following experiment we have used word building experimentally, in order to see whether these expectations are to be realized.

Arguing from analogy, we might expect that words could be 'built' from letters more readily or rapidly if these letters were presented mixed up in such a way that they did not already constitute a 'word.' Thus it ought to be easier to construct the word 'intellectual' from the letters 'alinletluetc'

than from the letters 'all in lettuce,' in spite of the fact that the letters are identical in the two cases. In the second case, however, they already participate in a 'configuration,' and according to the law it ought to be more difficult to wrest them from this organization and put them together differently, than it would be in the first case, in which the combination does not *mean* anything to start with.

And if such a result should be found, it might be reasonable to expect that individuals would differ in this respect, and that such differences would constitute important features of mental make up. They might even, if found, be related to the casual observations that some people find it harder than others to abandon an idea which they have once espoused. And such tenacity, or adhesion, or refractoriness might be sufficiently important to be given a technical name, and to have diagnostic tests constructed for its identification and measurement.

Our first experiment was as follows. A brief and fairly interesting short story, of one typewritten page, was written, the whole experiment having been suggested by a 'parlor game' that was perpetrated on the writer at a social function. Of the words of this story twenty-five were 'disarranged'; the letters were all there but by the jumbling of the letters the 'word' was concealed. Two forms, *A* and *B*, were prepared, in which these same twenty-five words were 'disarranged.' In form *A* the jumbled letters did not 'make sense'; thus 'intellectual' appeared in the form of "alinletluetc"; in form *B* this word appeared in the form 'all in lettuce' (more strictly 'allinlettuce').

College students were given a fixed time in which to *correct* the story, writing above each jumbled word the letters in their correct form. Half the group were given form *A* and the others form *B*. When 50 cases had been secured for each form, the papers were scored for the number of words correctly identified, and a very striking difference was found. An attempt was made to verify this finding on two more groups of 50 subjects each, and an equally striking difference was found, but in just the opposite direction. The average

result was just no difference between the two forms. Addition of further cases failed to produce any reliable difference.

We then sought to simplify the conditions, by eliminating the story, with its distractions and contextual suggestions. The new material consisted of a list of 50 names of familiar animals, such as tadpole, oyster, grasshopper, etc. Again two forms were prepared. In form *A* the letters were disarranged in such a fashion that they not only made no familiar animal name, but did not constitute a word at all. In form *B* the letters were disarranged in such a way that they formed words or word pairs, but not the names of animals. Thus in form *A* the animal 'tadpole' appeared as 'lpae odt'; in form *B* this animal appeared as 'leap dot.'

Various other rules were applied, such as keeping, so far as possible, a given letter in the same part of the total combination in both cases; breaking the meaningless letters into two parts if the meaningful arrangement took the form of two words; etc. The instructions given were as follows:

INSTRUCTIONS

All these are the names of animals, with the letters disarranged. Thus of CUB KOLL you can make the word BULLOCK; and of MECLA you can make the word CAMEL, and so on.

Opposite each write the correct name of the animal, using all the letters given, and no others. Do as many as you can in the time allowed. If some seem difficult at first pass over them and come back to them later, if you have time. Time will be called in ten minutes from the beginning.

Neither form *A* nor form *B*, as described, was used. Instead derived forms *C* and *D* were prepared. Each contained the whole 50 names or arrangements, half from form *A* and half from form *B*, in regular alternation, thus, in form *C*,

lpae odt	(tadpole)
storey	(oyster)
gpoerh psrsa	(grasshopper)
rag bed	(badger)

In form *D* the word appearing in one way in form *C* was here shown in the opposite fashion. Thus form *D* began as follows.

leap dot (tadpole)
 soetyr (oyster)
 gopher spar (grasshopper)
 rga bde (badger)

The correct word formations are given above in parenthesis, although of course these did not appear on the test blank. The two Forms would thus, it was hoped, serve as mutual controls, and could be combined in the final figures. Each contained the names of all the animals, half in one way and half in the other, the two simply being reversed in this respect. Any given individual was given but one form.

From the results various scores could be secured. In the first place, the total number of correct words built by each subject could be determined. These scores ranged from 1 to 25. Such scores do not bear directly on our problem, although they may tell something interesting about the individual. The process of word building deserves more careful analysis and study than it seems to have been accorded.

The only thing we have done with these scores is to compare them with Alpha Test intelligence scores which were secured in case of the majority of the subjects, of whom there were about 75 in each group (form *C* and form *D*). The results are as follows.

Median Words Built	Alpha Score					
	Over 180	170-179	160-169	150-159	140-149	Below 140
Form <i>C</i>	11.5	10	11	11	8	11
Form <i>D</i>	10.5	6.5	6.5	8	5.5	5

There is no consistent relation between Alpha score and the number of words built, among these college students, all of whom had already a certain familiarity with various forms of mental tests, through having been submitted to them. The range of Alpha scores, to be sure is small; but except for one group in form *D*, those scoring high in Alpha appear to build no more words than those with low scores. The only clear result that does appear is that form *D* is apparently more difficult than form *C*.

A more relevant score is to be derived from the number of words built from 'configured' and from 'unconfigured' letters in the case of each individual. The same difficulty arises here that arises always in the discussion of configuration. Of course by the absence of configuration is scarcely meant that the features have *absolutely no arrangement*. Just being there, side by side is of course an arrangement. Perhaps we can take refuge in the gestaltist's term 'prägnanz,' and call the arrangement which is more meaningful, that is which constitutes *some* word, a more *pregnant* configuration than that which does not do so, even though the *some word* is not the name of an animal.

In form *C* the average number of words (73 cases) built from configured letters was 5.4; from unconfigured letters the average was 5.7. In form *D* the average number of words built (79 cases) from configured letters was 3.7; from unconfigured letters the average was 4.5.

This looks promising; in both cases more words are built from letters that do not already constitute a configuration. The college student resembles the ape, the infant, and the idiot.

Unfortunately for the neatness of this outcome, we now secured another group of 42 cases on form *C*. The average from configured letters was 4.7; from unconfigured letters the average was 2.9. This contradicts not only the result from form *D* but also the previous result from form *C*. Combining all the available cases, form *C* (115 cases) and form *D* (79 cases) give opposite results, and no conclusion whatever can be drawn from these scores, as averages.

We next treated each subject individually, inquiring whether he built more words from one arrangement of letters than from the other (configured or unconfigured). We took the number made from unconfigured words as unity and stated each score by dividing this number into the number built by that individual from configured letters. A ratio of 100 thus means no difference; ratios greater than 100 mean more words built of configured letters; ratios less than 100 mean more words built of unconfigured letters.

The median ratio for form *C* is 100, while for form *D* it is 80 (73 and 79 cases respectively). The median ratio for the extra group of 42 cases on form *C* is also 100. Again the results are inconclusive. Form *C* would lead us to suspect just no difference. Form *D* would suggest that words are more easily built when the letters are 'free floating,' thus supporting the gestaltist expectation. The net outcome is at least not very favorable to the conception of a word as a constricting gestalt.

Again the subjects were distributed according to score in the Alpha Test, and the median ratios for each group found. The results are as follows.

Median Ratios	Alpha Scores					
	Over 180	170 to 179	160 to 169	150 to 159	140 to 149	Below 140
Form <i>C</i>	118	100	100	60	100	88
Form <i>D</i>	92	100	55	112	90	66
Average.....	105	100	78	86	95	77

The general trend of these medians suggests that the ratio is inclined to decrease with decreasing intelligence scores. The facts are somewhat clearer if we group the cases more roughly, into three groups instead of into six, as follows.

	Alpha Scores		
	Over 170	150 to 170	Below 150
Form <i>C</i>	109	80	94
Cases.....	38	33	18
Form <i>D</i>	96	84	77
Cases.....	26	14	9
Average.....	—	—	—

The figures are not very reliable, but it seems to be clear enough that those who are seriously handicapped by having the letters presented in a configured fashion are the students with Alpha scores below 170, these comprising about half of the group. The more intelligent half do not suffer this handi-

cap; if anything they profit slightly from it (average ratio 103). The presence of prepared configurations does not interfere with their wresting the letters apart and putting them into new forms.

As a matter of fact, even this attempt to get configuration into the character of a word is specious, and only proceeds by ignoring the unreliability of the differences. If we group together all those having ratios over 100, all those having ratios of exactly 100, and all those with ratios below 100, the median Alpha scores for the three groups are 166, 170 and 161 respectively. Here the highest scores actually belong to those who show just no effect of the configuration.

CONCLUSIONS

It seems necessary to conclude that we have been unable to show that the word, as a configuration, exercises any constraining influence over the letters which compose it, at least in the case of subjects capable of making Alpha scores of 140 or over. Since the evidence suggesting a constraining effect was slightly greater with the group making lower Alpha scores, it perhaps remains an open question whether positive results might not be secured with duller or younger subjects.

As a matter of fact the results are just what we ought to have expected, on systematic grounds. For one arrangement of letters is just as much of a 'configuration' as is any other, in spite of the fact that a naïve person may feel that letters that make a word somehow 'look more like a unit' than do letters that make non-sense.

Tachistoscopic studies long ago demonstrated that words do not function as 'gestalten.' The whole word has meaning just in so far as it leads to consequents appropriate to previous 'occasions' of which it has been a part, as Burke long ago showed, in his 'Essay on the Sublime and the Beautiful.'

Parts of words may have the same effectiveness as whole words, this being only the familiar law of cue reduction. The 'shape' of the word, certain letters of the word, etc., may lead to writing or speaking or other activity just as effectively as the whole word would if it were there. This is only the ordi-

nary law of perception. Therefore when *parts* of words are exposed in a tachistoscope the subject, as is to be expected, reports a *whole* word.

But this is not an incomplete gestalt, exhibiting 'closure.' Nothing closes; and nothing is 'supplemented'; nothing 'completes itself.' The simple fact is that the *part* of the word functions as effectively as the whole word would, *were it presented instead*. Hence the term 'gestalt,' as applied to words, is only a smoke screen. The simple fact is that partial stimuli may function redintegratively. This does not mean, as in the old days of Sir William Hamilton, that *the rest* of the word appears in the visual field (although it may appear in the subject's report, which is another matter).

We are disposed to carry the conclusion over to all the other cases in which closure, completion, supplementation have been introduced as explanatory terms. Words, we have concluded, are not 'gestalten.' But they come as near being this as does anything else. When a figure is presented on the retina, part of it coinciding with the normal blind spot, or with some other blind area, we should expect the subject to 'reproduce' a complete figure, within the limits of his experience. This does not mean that the retinal pattern, or any pattern of 'brain stress' has 'completed itself.' It means only that the subject gives the same report that he would give had the whole figure which he now draws been presented.

People are indisposed to admit that they do not see every thing that is put before them, or that goes on around them. On the witness stand they 'patch out' the memory gaps by what seems to them to be reasonable material. In the laboratory experiment they do the same thing. Partial stimuli evoke reports and reactions appropriate to larger wholes. But to suppose that the wholes are themselves evoked or deduced is only the gestaltist's illusion.

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