

## ON THE CONNECTION OF IDEAS\*

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*Dear Dr. English:*

I have been intending to write you in regard to your little dictionary and especially to ask you for a name by which to denote a certain psychological concept, but I have not found a chance until the present, and I don't know whether this season will find you at your Middletown address. I must say that I appreciate that dictionary; it is not only actually interesting—a rare thing for a dictionary—but valuable as well. But I have not been able to find in it or in any other source a recognized term for one of the phenomena in which I am interested and would like to know if you know of such a term or could suggest one.

I have not been able to find a term that I need to denote a kind of connection or relation, approximation, closeness, allied character, between ideas. The only psychological term I know of that expresses connection between ideas is "association," but this has quite a definite meaning and one that will not do for the meaning I have in mind. The

\* This unpublished essay was found by me among Whorf's papers as a partly typewritten, partly handwritten draft of a letter, dated July 12, 1927, to the psychologist Dr. Horace B. English, then of Wesleyan University, who had just published a dictionary of psychological terms. There is some question whether the letter was ever finished and sent, but Dr. English, now at The Ohio State University, has a vague recollection of receiving something like it. I have made minor editorial emendations and alterations where necessary.

“connection” of ideas, as I call it in the absence of any other term, is quite another thing from the “association” of ideas. In making experiments on the connecting of ideas, it is necessary to eliminate the “associations,” which have an accidental character not possessed by the “connections.” The subject must not jump at the first idea that comes to mind as in a “free association” experiment; hence the experiment might be considered a form of “controlled association”; yet it may be quite “free” in its own sphere, for any connection may be permitted.

“Connection” is important from a linguistic standpoint because it is bound up with the communication of ideas. One of the necessary criteria of a connection is that it be intelligible to others, and therefore the individuality of the subject cannot enter to the extent that it does in free association, while a correspondingly greater part is played by the stock of conceptions common to people. The very existence of such a common stock of conceptions, possibly possessing a yet unstudied arrangement of its own, does not yet seem to be greatly appreciated; yet to me it seems to be a necessary concomitant of the communicability of ideas by language; it holds the principle of this communicability, and is in a sense the universal language, to which the various specific languages give entrance.

For an example of connection, consider first the idea ‘down,’ and then the following ideas: ‘set, sink, drag, drop, fall, hollow, depress, lie.’ I will call these group A. It is clear that there is a “connection” between ‘down’ and each of the ideas in group A. Consider now group C, consisting of the ideas: ‘upright, heave, hoist, tall, air, uphold, swell.’ There is a “connection” between these ideas and the idea ‘up.’ Now in a connection experiment the subject, on receiving the idea ‘down’ would be free to connect with any of the ideas in group A or others like them but could not give any of the ideas in group C or the like. Yet, if it were a question of ASSOCIATIONS only, he might associate an idea in group C with ‘down.’ He might for instance have had an unpleasant experience in a boat when there was a heavy ‘swell’ on, from which he retained a vivid impression of continually going DOWN. But this association would not be a connection. It would pertain to his own personal experience rather than to the social or collective experience which is embodied in the common linguistic stock of concepts, and the reason for the association would not be intelligible immediately without explanation; it would require an explanation bringing in his personal experience. In

this sense of immediate intelligibility, 'swell' is connected with 'up' or the like, and is distinctly removed from 'down.' So, in further definition of this concept of connection, it may be said that connections must be intelligible without reference to individual experiences and must be immediate in their relationship. Mediate connections, i.e., connections through the medium of other connections, are to be called rather chains or paths of connection, or possibly "communications."

It is possible to formulate another group of ideas, group *B*, which mediate between *A* and *C*, so that we can pass, by means of various chains or paths of connective communication, from *A* to *C* and hence from 'down' to 'up' entirely in a connective way and without the aid of association. For instance:

|   |         |       |       |           |        |         |        |      |
|---|---------|-------|-------|-----------|--------|---------|--------|------|
| A | set     | sink  | drag  | drop      | hollow | depress | lie    | DOWN |
| B | stand   | heavy | pull  | precipice | space  | bear    | extend |      |
| C | upright | heave | hoist | tall      | air    | uphold  | swell  | UP   |

Subjects feeling their own way through the congeries of ideas between 'down' and 'up' do not always follow these paths but often find others. For instance, subject M. F. went as follows: 'set—heavy—swell—up.' Asked to explain the connection 'set—heavy,' it appeared that 'set' entailed a strong notion of fixation or fixity, and suggested 'rigidification, congelation, stiffening, thickening,' as in the setting of jelly, while 'heavy' implied to the subject not merely 'weight' but 'body, density, viscosity,' an idea closely similar to the preceding 'set.' This is a true connection, although it was not instantly intelligible to the experimenter, but it was quickly understood without reference to any personal experience. The connection 'heavy—swell' also was not instantly perceived, but it developed that 'heavy' conveyed essentially the idea of quantity or mass, including 'massiveness, size, increase': hence 'enlarge, expand, swell.' This again is a true connection. The same subject starting with 'up' traversed the path 'up—hoist—pull—drag—down.' Subject W. W. gave 'down—drop—heavy—hoist—up.' Asked to explain the connection 'heavy—hoist,' it appeared that heavy suggested the feeling or bearing of weight, the 'hefting' of a thing, essentially as lifting action. If the word 'heave' had been more familiar to the subject, he might have chosen it in preference to 'hoist.'

But a different and nonconnective process appeared when a young man having reached an idea 'past' took as the next step 'hiding,' over-

looking an obvious 'before' in the same group. This still might be a connection if it yielded a satisfactory explanation, but the best explanation he could give was that one's past was usually unpleasant and so one would prefer not to remember it; hence it was in hiding. This might perhaps be only an awkward way of expressing the connection, but it appeared not. He did not respond to the suggestions that 'past' meant 'receded, withdrawn, retired, concealed,' or that it meant 'gone, vanished, invisible, concealed,' or that it meant 'existent (in memory)' but not 'apparent, stored up, hoarded,' etc., but persisted in this quite extraneous idea of the unpleasantness of the past. Hence I concluded either that an unpleasant past really had colored his way of thinking, or that he wished to pose as somewhat of a misanthrope or cynic, or that he had been reading psychoanalysis: that in any case we had to do here with something personal, which was indeed an ASSOCIATION yet not a CONNECTION. In telling him that I wanted connections that had nothing to do with personal experiences, he admitted that this might not apply to his association, and then chose 'before.'

Sometimes a subject will jump to a true connection by association and then get the connection later; e.g., W. W., a college freshman with intelligence distinctly above the average, said he thought the connection between 'drag' and 'down' was like this: 'drag' meant 'pull' and things went 'down' because PULLED by the ATTRACTION of gravity. He had just taken an examination in physics. I asked him whether he could have recognized a connection if he had never heard of gravity and he supposed not. I suggested that gravity might prove to be a compacting together due to a kind of external pressure, and then what would become of the connection? A mere hint was sufficient to lead him to the true connection, which is simply one of linguistic meaning, i.e., 'drag' = 'trail, dangle'; what is 'dragging' is in general 'down,' not 'up.' This is an interesting commentary on the inability to distinguish theory from fact in what is learned, even in an exceptionally intelligent student. (Or perhaps especially in such a one? That is, if intelligent means quick to learn, perhaps it also means receptive and hence too credulous?)

Can you suggest any better term for this sort of affinity than "connection"? I might say that my mental image of the relation is not at all one of ideas hitched together by bonds of attachment which they possess like miniature hooks and eyes. It is more a concept of continuity, with the ideas as relative locations in a continuous medium. Take an idea

like “up,” and say it corresponds to a certain location where we are. Now I can conceive that something like motion may happen to us. The idea “up” is a sort of neighborhood, and we are leaving that neighborhood. We cannot tell exactly where any neighborhood leaves off. We know that the idea UP is assuming a different nuance: it is growing to be like the idea RISE. But, after a certain amount of this change or “motion” has taken place, we know that we are in a different spot; the idea is now definitely ‘rise,’ not ‘up.’ Motion continues, and ‘rise’ becomes ‘left.’ ‘Left’ insensibly becomes ‘carry,’ and this becomes ‘sustain.’ We are now definitely out of the vicinity of ‘up.’ Any one of these ideas might have become something else by varying the “direction” of motion. ‘Sustain’ might become ‘nourish,’ or it might become ‘continue.’ ‘Nourish’ might become ‘feed,’ and ‘continue’ might become ‘long.’