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### Cognition and volition in language

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## CHAPTER VII.

### CONCLUSION.

1. The above examples warrant the assumption that the cognitional and the volitional are inextricably bound up in speech. Purely cognitive mathematical or scientific truths require volitional motives to convey them to whatever ears they are intended for. On the other hand *all volitional utterances expressed by means of words, require not only that these words should be within recall, but also that they should be distinguished from those to which they are related in form or meaning, that is to say as long as there is room in consciousness for verbal perceptions, speech never is wholly volitional in character.* When the mind is filled with affectional elements only, to the utter exclusion of all cognitional perceptions, there can be no question of speech, properly speaking. There may be cries, or tears, or punches or blows, or shouts or the tearing of hair or whatever expressional gestures man may have recourse to, but there can be no coherent speech.
2. Not only are volitional and cognitional elements indissolubly bound up in speech, but there is unmistakable evidence that all verbal utterance, however complex in form, proceeds from simple mental impulses.

It was shown above that articulate sounds are produced by the joint activity of different muscles. Being a synchronous process, this muscular co-operation must be due to synchronous excitations of the nerves that govern the movements of the voice apparatus. And as these nerves have

their central terminals in the brain, it follows that whatever the character of brain-stimulation may be it must be a process, which affects all the vocal nerves simultaneously.

3. As shown in Chapter II, such one-word sentences as *Stop!* are expressive of both cognitional and volitional elements. Their volitional character is associated chiefly with the peculiar action of the laryngeal musculature which marks them as imperatives; their logical aspect depends chiefly upon the actions and reactions of the supraglottal musculature from which spoken words derive their shape, with all the muscles of the respiratory apparatus in attendance. Again the nerves that govern the laryngeal musculature are seen to be excited simultaneously with those that govern the movements of the tongue, the lips and the uvula.
4. The same applies to sentences consisting of two or more words. Their greatly varying contents are reduced to unity previous to being delivered. Whether they refer to what is mentally conceived as fact or as non-fact, there is a mental process to fuse their cognitional and volitional elements together. It is probably the same unconscious kind of flash as that which produces our associations, and that which enables us to mark twelve units off as a dozen, twenty units as a score, or to denote such very complex sets of phenomena as a shipwreck or a war by simple terms. It may be likened to the flash (electric or otherwise) which is required to fuse hydrogen and oxygen, when put together in due combinable quantities, into water. Whatever may be the mental process that provokes speech activity, the expression of volitional can be made to synchronize with the expression of cognitional elements.
5. As neither thought nor volition can be transmitted by means of speech-sounds, unless these sounds are known

to the speaker and the person spoken to, one must assume that previous to speech-formation, rapid as the process may be, there is that distinction of the forms of words and sentences which renders them fit, or which is thought to render them fit, for communicating the infinitely variable forms of mental contents from one person to another. As the distinction of words depends upon the distinction of individual sounds, and the distinction of sentences upon the distinction of words in their form and order, speech, if it is to function properly, is seen to be conditioned by the distinction of sound. All conscious articulate speech is guided by the intellect.

6. There is the vast mass of experience of foreign language instructors to support this assumption. No alien sounds can be properly reproduced until their auditory and motor characteristics have been properly perceived. It takes the average Dutch scholar many months of training to master the pronunciation of isolated *th*'s, it may take twelve months or more to master such combinations as *s + th*, *th + s*, *sh + th*, etc. Many never succeed in hitting off the right lengths of the vowels in such words as *bat* and *bad*, *bet* and *bed*, and the quality of the final consonants of *cab*, *bag*, *cap*, *back* etc. One lady-pupil of the writer's took more than twelve months of assiduous practice to master the dull sound of the English *l* in *cold*, *field*, etc. her natural *l* being combined with the position of the Dutch vowel heard in *duur*, similar to the vowel in the German *Tür* or the French *lune*. A nine months' stay in England had never made her conscious of the peculiar way she pronounced such words as *bold*, *cold*, *pull*, *pulled*, etc. Even when aware of what from the English point of view is a defect, she had great trouble in getting her voice muscles to conform to the dictates of her conscious

self. The reason why some pupils succeed almost at once, without any visible effort, where others take many months of training, is a matter of personal aptitude and very likely one of heredity.<sup>1)</sup> Subconscious agencies may also be at work. Some Dutch children will pronounce *th*'s quite easily when in their prattling stage, and afterwards lose the formation of them altogether.

7. All these articulatory exercises of adult pupils are in a way repetitions of infant practice. They are rendered more difficult, it is true, by the associative influence of those vernacular sounds, which are more or less similar to the foreign ones. But they are like infant experience in one very important respect, i. e. *the sounds must be distinguished on their acoustic and organic sides before one can hope for a successful reproduction.*
8. Sound-combinations have to be distinguished in the same way as single sounds. In *kun je*, one of the Dutch equivalents of *can you* the *n* and the *j* have coalesced into one nasal consonant, similar to *gn* in the French *campagne* and *agneau*. It is a pretty common occurrence at public examinations for candidates to know the rule without being able to reproduce *can you* in its English form.
9. Words have to be distinguished, not only in their isolated forms but also in connected speech. The commonest instance in Dutch schools is the pronunciation of the English definite article before vowels. The ordinary *the* before consonants, once the lip-teeth character of *th* has come to be distinguished is easy enough. But *the* before a vowel, with its *i*-sound, cannot be mastered unless it

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<sup>1)</sup> The association of auditory impressions to motor responses is sometimes amazing. In the Groningen school for backward children there was a girl of very feeble intelligence, who would play any tune on the piano after hearing it two or three times.

is completely divorced from the associative influence of the Dutch article *de*, the vowel of which is the same before consonants and vowels.

10. The mispronunciation of the article is not likely to affect the meaning of the word to which it belongs. But such words as *dead* and *death*, *heat* and *heath*, *invidious* and *insidious*, *derisive* and *decisive*, *dusky* and *dusty* and many others require to be perfectly discriminated against the levelling tendencies of their strongly associated forms, if they are to function properly in speech.

11. Sentences too, have to be distinguished as regards their form if they are to function properly. Statements, questions, commands and exclamations have each of them their own peculiar sound-arrangement with their own mental associations. Such sound-couplets as *The superintendent had a cage constructed* and *The superintendent had constructed a cage* differ so widely in symbolic value that their proper discrimination becomes a matter of absolute necessity.

Consider the manifold diversity of forms in *You like cocoa. Do you like cocoa? You don't like cocoa. You do like cocoa. You don't like cocoa? You don't like cocoa, do you?. You like cocoa, don't you? You never liked cocoa*, — all of them having the same perceptual elements, but widely different mental associations, which have to be mastered somehow or other, before a person, whether native or foreign, can claim to speak the King's English.

12. The physical aspect of speech was found to consist of bunches of sound, varied *ad infinitum* to suit the infinite requirements of human intercourse. As each bunch is mentally a unit, specifically and generically distinct from others, sentences ultimately fall under the general category of ideas, all simple sounds and all their combinations into words and sentences ultimately assuming the character

of class-nouns having certain functional attributes in common.

13. Those disorders of speech which are symptomatic of brain-lesions show that the combination of simple sounds into words and of words into sentences is not conditioned by the existence of sensory images only. There is some unconscious binding matter, some force that holds them together. Lesions of the brain are characterized by all sorts of irregularities in word-formation and sentence-formation, and the associations of things and sounds appear to be divorcible. Sometimes the visual image of a thing is recognized, when its auditory associate is lost. Sometimes the patient breaks down in grammatical construction. Some patients will rattle out words that make no sense, others seem to understand words but lose the control of their motor apparatus. It follows that each normal sentence is a successful reproduction of the first correct associations laid between the mental images of sound-organizations on one hand and their correlated thing-images. If sentence-formation proceeds so rapidly as to resemble reflex reactions, it is because habit has reduced neural resistance to the smallest possible minimum.

Glottal sounds can be made spontaneously, the power to produce them being a matter of heredity. But articulate sounds must be cognized again, whenever they are to be used for social purposes. So must sound combinations. So must words and sentences. While there is no cognition, as in the pre-word stage of the infant, or in the initial stage of the learner of a foreign language — or no recognition through brain-lesions or otherwise, no speech can be made. The corrections made in the course of speaking or writing show the intellect to be constantly

on the alert while the sentence is being delivered. The facts of methathesis, prolepsis, and other misplacements prove that cognition precedes the delivery of words. And when speaking or singing slowly one can mentally see or hear each syllable in the conscious field before sound is given to it.

All this leaves no room for doubt but what there is of volition in the production of the sentence is conditioned by the cognitional, as much as by the social and other affectual incentives which provoke speech-activities. The point of application of the volitional forces that start the vocal musculature is always found to be a perceptual given, and no method of instruction which disregards this primordial fact can hope to be successful.

THE END.