

VIII.—DISCUSSIONS.

PERCEPTION OF CHANGE AND DURATION—SOME ADDITIONAL NOTES.

THE following short notes, based upon certain considerations put forth by Dr. Stout in the January number of *MIND*, may, perhaps, be not altogether out of place. Dr. Stout there refers to three classes of experiences—temporal perception, comparison, and the apprehension and recognition of 'form-qualities'. The present paper aims at drawing certain general distinctions; and in so far as it deals mainly with comparison, it somewhat belies its title. Further, no attempt is made to give a scientific account of the mental processes at the bottom of these experiences; nothing is undertaken beyond the preliminary task of ascertaining what is present in consciousness when we apprehend succession, compare, etc. It remains an open question whether the conscious or apparent factors are a true report of the real process. From the purely introspective method pursued there follows a possibly offensive predominance of the first personal pronoun. This seems to be unavoidable, but it must be understood from that very predominance that the value to be attached to distinctions drawn below is purely temporary. The final verdict must rest with those who have the opportunity to observe themselves under the accurate and repeated conditions of experiment. Hence, too, no figures are given; and as the papers containing the figures of various experimenters are so well known, it is unnecessary to give precise references.

1. *Temporal perception*.—(a) The view of Duration that Schumann takes the trouble to overthrow can scarcely be considered serious psychology, for it commits the long-branded mistake of substituting a mathematical moment for the empirical or psychical present. (b) With regard to succession and change, it seems quite plain that when presentation B follows presentation A at a moderate interval, no memory-image of A *need* be present when we apprehend A to enable us to experience change. It may be present, but its presence is not essential. Nor is it evident that the *a priori* argument to the contrary would have cogency, for the simple perception is not a consciousness of change from A to B, but a mere 'change-consciousness,' as Dr. Stout well terms it.

Such simple change-consciousnesses in all their primitive simplicity are not uncommon, but they are apt to be overlooked because their vagueness renders them useless for the purposes of accurate thinking or practical doing. They are characteristic of our lazy times; but in our times of purpose and pursuit they are not the direct objects of our attention. Either they have acquired a definite meaning in the usual way of acquirement of meaning, so that this change-experience means the change from A to B and that the change from C to D, this the succession of two raps and that the succession of three, and then it is the meaning which has interest for us; or, where the meaning is not clear, we make use of reflective comparison,—of which more must be said presently. Here a word must be added as to the case when B follows A with great rapidity. Mr. Shadworth Hodgson asks in the last number of *MIND* (p. 242) whether “Dr. Stout’s two eminent German authorities have made it impossible to suppose that we can ever in immediate perception hear, say, a postman’s double rap, or distinguish it in immediate perception from a single rap”. The answer is that, if the postman raps quickly enough, the two knocks would fall within the same psychical moment or present, that is, within one apprehension; and they would be distinguishable from a single knock, not because the first rap is present as a memory when the second is apprehended, but because the total impression differs.

2. *Relations of Intensity or Quality.*—The difficulty of comparing successive presentations A and B seems to depend upon three factors, the actual amount of difference between A and B, our purpose in comparing them, and the time-interval between them. The difference between A and B varies from ‘nil’ through the just-noticeable upwards; our task may vary from simply judging ‘equal’ and ‘different’ to assigning a position to the different, such as ‘stronger’ or ‘weaker,’ ‘higher’ or ‘lower,’ etc.; and with regard to the time-interval, too rapid a succession flurries us, whilst too slow a succession may make comparison altogether impossible. Granted a suitable rate of succession, the easiest task is, of course, to judge as merely ‘different’ a more than noticeable difference, the hardest to assign a position to one that is only just noticeable; and between these limits are many grades of ease and difficulty. Now if we leave aside the case where A and B are judged equal or the same, it seems *a priori* probable that the mental processes involved in judging difference will vary with the difficulty of drawing the comparison. Whether this is so only those can finally decide who have subjected themselves to a long course of self-observation under conditions of experiment, and in saying that it does seem to me to be true, I speak with a full knowledge of the weakness of every-day observation in regard to these fine points. However, from such rough tests as I have been able to apply to myself, I incline to think that—at any rate in my own case—the facts are somewhat as follows: (1) When the task

is easy, presentation A need not be present as a perception or memory-image simultaneously¹ with B. This is quite plain in ordinary life; if one is shown first a cabinet photograph and then a life-size painting, the judgment of the latter as 'greater' seems to 'go off of itself' without the presence of a memory-image of the photograph. And on this point most experimenters are agreed. Schumann's verdict has been quoted by Dr. Stout; an equally decisive passage from Wundt may be found in the *Phil. Stud.*, vii., 229, where after opposing Schumann's interpretation of the experiments on the span of consciousness (a difficult point that may be avoided here) he says, 'Eine unmittelbar anschauliche, d.h. nicht durch successive Addition der Theile und discursive Reflexion vermittelte, Vergleichung ist möglich und wird in unzähligen Fällen von uns ausgeführt, wenn von zwei complexen Vorstellungen A und B nur jede für sich als ein simultanes ganzes im Bewusstsein war,' and the condition that A and B should be present at once is 'nicht erforderlich'. The passage refers to complex ideas only, but the principle may be applied throughout. It would perhaps be better to avoid the word Comparison altogether in these cases, except that a term is not easy to find which shall cover not only the cases where we judge 'different' but those where we assign a position. (2) As decision grows more difficult the mental process grows more complex, and finally I at least find a memory-image very necessary. Only it is not always a memory-image of A itself, but of something that does duty for A. This is a possibility which Dr. Stout has not mentioned. It can hardly be doubted that the mind does not always take the high road to its end; very often a by-path is preferred, and that perhaps not always a short cut. For example, in comparing two sound intensities A and B which are near the difference-threshold and do not follow one another so rapidly as to fall within one apprehension; I generally make use of a memory-image, not of the sound A, but of what I can only describe as the total 'shock' or impression produced on me by that sound. This shock is one of those experiences that are more easily verified by the reader in himself than analysed; it is not a simple sensation nor a simple feeling (certainly not a feeling of the pleasure-unpleasure series), but as it is ascribed to the subject only and not at all to the object it should perhaps be called a complex feeling. It may be asked whether this shock is compared with B simply or with

¹ It might be argued that A and B cannot be present in consciousness absolutely simultaneously and yet be recognisably two. But this is a confusion of consciousness with the 'Blickpunkt'. Attention is fully fixed only on A or B at once, but so far as may be it remains master of the other at the same time. Cf. Stout, *An. Psych.*, vol. ii., p. 165; Wundt, *Logik*, vol. i., p. 58. But it is curious to notice that in some comparisons of spatial figures or forms—e.g., of lines—there seems to be something like superposition. In these cases attention is mainly fixed on the difference.

the shock occasioned by B. If it suffices to compare the memory-image of this symbol of A with the percept B during the actual perception of B, then I should say that no very strict differentiation of the actual sound-intensity B and the subjective shock takes place; but the comparison is rather with the shock than with B itself. However, such conditions seem to be rarely realised in cases of difficult comparison; rather, we take time to consider the matter before answering. The result is that B itself, if caused by a momentary stimulus, passes away, and then I have no doubt that the memory-image of the symbol of A is compared with the memory-image of the symbol of B. Indeed, I notice a tendency in very hard cases to imitate the shocks by other means, *e.g.*, by movements of the lower jaw, head, or hand, but never any attempt to imitate the sound-intensities by rapping on the table or the like. This is probably due to a very defective auditory memory, but much the same occurs elsewhere. As a rather different example I may cite the case of voluntary movements. In experiments on such movements of the arm carried out on Störing's apparatus,¹ the simplest manner for the blindfolded subject to decide whether one flexion or extension was equal or not to another would seem to be a direct comparison of the series of so-called 'movement-sensations'. As a matter of fact, these were never except in very large movements the *conscious* factors that determined my judgment, nor indeed could I by any amount of effort distinguish these sensations as a rule; but I made use of various complex ideas of direction, distance, position, etc., and the ideas that were most prominent in movements on one part of the apparatus were often least prominent in other parts. This seems to be a case where, to judge from what is actually present in consciousness, a roundabout way is preferred to a short cut. Thus, whilst subscribing to Dr. Stout's theory as a whole, I should like to venture a generalisation from my own case and give the statement a more precise form, as follows: The apprehension of a presentation B as different from a previous presentation A does not necessarily imply the coexistence in consciousness with B of a perceptual or memorial image of A. If B follows A with sufficient rapidity, they fall within one perception and so are present together. Otherwise A is usually not present if the difference is easily apprehended. But when the comparison can only be effected with difficulty—*i.e.*, when there is true comparison—it usually happens either that a memory-image of A itself is compared with the percept B or with a memory-image of B, or that a memory-image of some experience that is recognised as standing as a symbol or formula for A is compared with a similar formula for B or with the memory-image of such a formula.

¹ The apparatus is described in *Phil. Stud.*, xii., 475. The experiments mentioned were under Dr. Störing's leadership, and as his account of them has not yet appeared, an apology is due for this previous, though very cursory, mention of them.

A word as to those cases where we judge B to be the same as A. These are cases of Recognition, and they are marked by the feeling of Recognition or Familiarity. But this feeling, though it may be prior to the judgment, can scarcely be the conscious condition of it, for it must itself rest upon the same conditions as the judgment. Leaving it aside, then, we find that recognition is ordinarily easy; we also find few to maintain that it implies the comparison of a distinct memory-image a of A_1 with the present percept A_2 ; and so far our general view finds support. But do we in cases of difficult recognition use comparison proper? It might indeed be asked whether recognition with difficulty is possible, whether, *i.e.*, when we have got below the least noticeable difference we do not necessarily judge 'equal' or 'the same' with equal ease. But in simple cases such as sound intensity or tone-pitch, even if we disregard the relation to this matter of the 'undecided' judgments that occur about the difference-threshold, we cannot fail to recognise that the time-interval between A_1 and A_2 influences the result greatly, and I should be inclined to say that as the interval increases beyond the point of easy recognition the tendency grows to make use of a memory-image of A_1 . Certainly this is so in the complex cases of ordinary life, where, *e.g.*, we recognise a comparative stranger after some lapse of time. In these cases, of course, the question of what differences are important and unimportant complicates matters; but in general it seems that the more uncertain the recognition is, the greater the tendency to use memory-images.

3. With regard to cases like that of a melody, it seems on the whole better to exclude them from the present discussion. Meinong of course gives his position away in saying that "zum Vorstellen einer Melodie das gleichzeitige Vorstellen sammtlicher sic ausmachenden Töne unerlässlich erscheint". A theory that demands so much as that is too unconscionably importunate. But it is not without reason that Schumann has objected to the use of these very complex examples, with regard to which very different views might be held, none of which would necessarily injure our previous contentions; *e.g.*, the chief importance may be attached to feelings, and even then subsequent differences of opinion are possible. For one tersely and forcibly put view *cf.* Lipps, *Ztschrift. f. Psych.*, etc., xxii., 384.

T. LOVEDAY.