

## THE GENESIS OF GENERAL IDEAS FROM GROUP PERCEPTION.

By group perception we, of course, do not mean aggregate perception. Thus, if my first experience with oranges is in seeing a dozen on a table, I apprehend these as a group, and not as an aggregate. Mere aggregate vision—and so multiple image in re-presentation which is plainly not general idea—may occur with animals having multiple eyes; but in ordinary single vision the group is grasped together as such, and so in re-presentation the single image embraces the many like things, giving thus a general idea. The empiric germ of the general idea lies then in apprehension of group of several or many; and this group is a common circumstance in actuality, and a necessary one to be grasped by successful adaptation in the struggle of existence. That a mere aggregate of pictures may imperfectly fulfil this function with multiple eyed animals seems likely, but in higher forms single image vision achieves a picture of aggregates in practically simultaneous perception, for example, a number of yellowish roundish objects—oranges—here is real presentative concept of group of the several made in a single focus, and also by the panoramic sweep of the eye which implies use of after-image in the construction of the group. In this way if we first see negroes in a group, we note them as ‘blacks,’ and refer after-experiences to group ‘blacks.’ Here by direct inspection objects are seen together as a group, and if next day I see a negro the presentative concept of the previous day is called up in re-representation, and so identifying the negro as ‘one of those.’ In this interpretation I surely have so far a general idea, and that purely empiric, and which may be considered as the simplest and original form. The practically simultaneous presentation of the individuals as group of very obvious similars—say negroes or oranges—and the use of the same in re-presentation, are the basis of the latter phase where, through reflection and comparison, a number of more or less dischronous presentations recalled are united as group or class, and still later of the self-developing experience in abstract ideation.

Of course group perception in re-presentation is only as yet nascent concept, only general idea in a very crude agglutinative form. The compound group reference is a clumsy and slow method; and so as evolution demands economy the group reference is abbreviated and amalgamated, and the group concept fades into the single image concept, the vague and typical ideal one, representative or vicarious (Wundt) for the many. Thus the idea answering to the word orange

is not a group idea, but a single image so generalized for color, size, etc., that various oranges of different shades and sizes are readily identified under it, whereas in multiple-group-idea the connection is made with the whole group. Hence concept begins with 'oranges' and ends in 'orange.' That by continual reference to the empiric basis as group perceived there tends to come an abbreviation in the number perceived, and a single typical one constructed from the group, is evident if you refer to some experience where you first saw some kind of objects as group, say telephones at an exposition. There you gain in a moment a group perception, which comes up in re-presentation when you afterwards see telephones, but which is continually reduced and made indefinite in later experiences as a datum by which you interpret. Of course many active minds will form the single image concept on the spot, 'anything so and so is a telephone'; but yet the group method may often be traced as evolving into true general idea.

The history of knowledge then is in brief this: the presentation of the individual and recognition by the re-presentation, and practically correlative with this the presentation of masses of individuals and recognition of component members by the re-presentation, which gradually evolves into the vague hypothetical general idea as a shorthand method, which in turn is denoted by language and becomes the basis of all high and self-developing knowledge. The general idea is then a mode of interpretation and as such finite; an omniscient knowledge would know the thing completely without either percept or concept as means, immediate apprehension giving the totality in all its significance. Hence the idea is neither infinite nor eternal. The idea is entirely an empiric help, a mode of reference to the thing through the typical characteristic ideal thing as abstracted from group perception, by which, without the trouble and danger of direct experience, we know the thing for all its qualities for possible experience. And thus as to the distinctive quality of the general idea, we cannot agree with Professor James (*Psychology*, V. 1, p. 468) that this consists in eternal sameness. Self-identity and dogmatism are plainly the inner characteristic of all cognition psychoses, whether of the particular or general, whether mere apprehension or complete interpretation. That the idealist affirms some or all ideas as absolute is an objective value upon which psychology is not called to pronounce.

So, also, it need not be enlarged upon that the distinction of the one and the many is not a peculiar quality of the general idea, nor is that of mere commonness or generality. The dog seeing the man

unclothed and variously clothed undoubtedly forms some general idea of the manifold yet single individual, just as the child does, just as we do. We perceive, equally, the common content quality as equally making the man and men. Thus both percept and concept imply grasp, and the quality of both is the fundamental unitary aspect of all cognition. And so both the individual and the general idea have the same formula :

Anything which has such and such marks is *the* food or *a* food.

This has such marks.

This is *the* food or *a* food.

All cognition as interpretation by sign must assume this form and all consciousness as containing mediating links—one consciousness as leading from a former to a later one—is implicitly rational; and this link as actively sought in object and consciously used in the struggle of existence is reason as either particular or general idea.

If the general idea is an abbreviation of what we have called group perception, then, since group perception is certainly quite early in the history of life, it is probable that the general idea is early also. The dog sees the pieces of meat, his breakfast, as a whole group; and it seems likely that with constant use this *datum* as representation consisting of complex manifold images should be abbreviated to representative single image. While we cannot attain direct test in the case of the dog or other animals, yet the struggle of existence would seem to require that the clumsy and large compound group of images should quite rapidly merge into a single image which should embody the common qualities of all the multiform individuals of the group perception. The analogous stages of perception as leading to particular and general idea may thus be enumerated: 1. The one sense with the one object, the simplest percept, as apprehension of the smooth apple by touch. 2. The correlating the senses in immediate apprehension, as in touch, taste, smell, sight of the apple, thus constituting the individual apple by complex psychosis. 3. Direct recognition in representation of the simple and complex individual. 4. Recognition of the essential individuality by the abbreviated re-presentation. Similarly we have for the general idea the four stages, group perception by one sense, by several senses in conjunction, recognition by the complete re-presentation, recognition by the abbreviated re-presentation. It is plain that a new kind of thing, *e. g.*, apple, is as likely first to be given to experience in group as in the single individual, and hence that the phases of development issuing in particular idea and general idea are really parallel, that the general idea is on the same plane as

the particular idea, and not higher, as is commonly thought. The pictures of both individual and group become by the same process highly generalized into an object where certain essential qualities are roughly sketched in abbreviated form, becoming at last a mere notation and sign, of which the evolution of the alphabet from pictographs is both an example and an illustration. The complex simultaneous group perception is certainly more simple and primitive basis for the general idea than the composite photography of objects perceived at different times, which has its place as later and more advanced method. It is plain that the cognition and recognition of the multiple in environment are called for quite early in the struggle of existence. That is, real grasp in perception, in the re-presentation and in its abridgment as general idea may occur among unisensual animals. The paramecium in Mr. Jennings's interesting study (*Am. Journal of Psychology*, x., p. 507) in its feeding contact with 'loose fibrous bodies' may have multiple perception and 'know a good thing when it has it'; and in its continuous feeding, appreciating its food as such, it connects past moment with present by rational interpretation. Again, does not (p. 510) the random *seeking* for food imply ideation as tactile re-presentation? At least the activities of the paramecium suggest awareness, effort and pleasure-pain, if not particular or general representation. But with the dog there certainly seems to be recognition of his master by particular idea, and of men as men by group re-presentation, which probably in such a common case becomes abbreviated into general idea. However, since we have at present no well recognized tests as to consciousness in the lower animals it is unprofitable to discuss the matter, save to remark that the evolutionary doctrine of psychosis points toward an early development of gross general idea as derived from group perception.

However late or early a genesis we find for the general idea, it, on the evolutionary doctrine of the struggle of existence, must like other advantageous life factors originate in severe effortful activity in the critical moment. The one who makes the quickest reference for identification will be the most successful, and at some point in the history of life some organism has, by supreme effort, attained vital advantage by summarizing the group re-presentation in interpreting the present crisis. And if we turn from this theoretical point of view and examine the origin of the ideas in ourselves—the only direct evidence we can have—we find that thought does not arise spontaneously, but the idea has its birth pangs. If we reflect upon our experience in getting the idea of new things, as trolley car or telephone, we perceive that

even in these simple cases the idea is accomplished in self-activity somewhat effortful. And thought is for the vast majority the most laborious and disagreeable of tasks, and with very few who are thoughtful by habit or nature we must refer the origin of habit and nature to integrated effort. We thus cannot agree with those who find the genesis of the general idea in the spontaneous fusion of images into a composite or generic image. And it has not yet been shown how a perception of resemblance results from coalescence of resembling perceptions. This, indeed, gives not even a 'one of those,' but a blurred one which stands merely for and by itself, whose representative value is not understood. However the germ to higher development lies in the simple identification as 'one' (abstraction) 'of those' (generalization). 'That is that,' and 'that is one of those,' give in very abstract language the process of the primitive particular and general idea.

We cannot then agree with Romanes in his doctrine of 'recepts' as the origins of ideas. If we trace the genesis of these recepts we find it in active association, relating or thought. Thus the city man (*Mental Evolution in Man*, p. 50) who in crossing the street and hearing a shout behind him at once has the receipt, 'hansom cab,' receives it only because he gained it in early childhood. So while 'obvious' (p. 68) is the law of the receipt, we have to trace the obvious as made such by repeated efforts in the struggle of existence. Thus by integration mind as hereditary and habitual function is constituted, and thus the bird has a large obvious which is obscure to man, and *vice versa*.

But if the concept originate in activity we need not, as Wundt, make activity the permanent differentiation of the concept. The thoughts which arise spontaneously in thoughtful people are as truly thoughts in their psychological structure as the same thoughts achieved by most powerful effort by the unthoughtful. Thus, 'This is a picture,' is equally a process of thought whether laboriously attained by the child or enounced as matter of course by the parent. So also for the particular idea, a detective who has the recognizing habit recognizes that face with practical spontaneity, which I, who have no aptitude or custom of remembering faces, recognize only with greatest effort. No evolutionary psychologist can emphasize, as does Wundt, activity-passivity as a mark of genera or species. The genetic psychologist holds the real key to classification of psychoses as progressive functions achieved in the struggle of existence and integrated as 'mind,' just as the genetic biologist holds the real key to the classifi-

cation of living forms as the progressive adaptations to environment which become integrated as 'body.' Hence as *versus* Wundt (Lectures on Human and Animal Psychology, p. 146) and Sully (Human Mind, V. 1, p. 389) we cannot allow that mind ever proceeds as mere apprehension, mere intellectualization, but its development as idea is controlled by interest; pain and hunger incite to grasp in presentation and re-presentation and to the abridgment of re-presentation into general idea.

HIRAM M. STANLEY.

LAKE FOREST, ILL.

### ON AFTER-IMAGES—AN EXPLANATION.

In the last number of the *PSYCHOLOGICAL REVIEW* Miss Washburn complains that a statement made by me regarding her experiments on after-images is misleading. This statement was that her subjects were drilled to note images similar to her own.

The denial made by Miss Washburn must be accepted as final evidence that such was not the case, although after re-reading her article in *Mind* I do not find that the account there agrees with her later statement. The following quotation from the account of her experiments will serve to indicate that if the statement made is misleading, it is due largely to the lack of clear expression in her article. She says:

"A reliable test could be had of the degree of special practice attained by the subjects in the course of the research and of the influences of the external sources of error. This test lay in the uniformity of the color changes observed in the ordinary unmodified image. A wholly unpracticed observer noticing the course of an after-image for the first time reports chaotic results and no two observers agree as to the alterations in color which occur. *No results were taken account of from any subject until she was sufficiently practiced to find the color changes approximately uniform*<sup>1</sup> or affected only by such fluctuations as could be accounted for from external causes.

"The first point to be determined was the *sequence of colors to be expected* for the ordinary image under these conditions. *This was ascertained by a series of forty experiments made by W.* at the outset of the research; *the other subjects being then p-acticed* as stated above *till their accounts of the course of the image were consistent.*"

Miss Washburn may have intended to say 'till their accounts of the course of the image became constant' (*i. e.*, of less variability). When her last quoted remarks are coupled with the statement that the *normal* or *expected* course of the image was found from the results of a series of experiments made upon herself, a natural inference is that the subjects

<sup>1</sup> These and other words are italicized by the present writer.