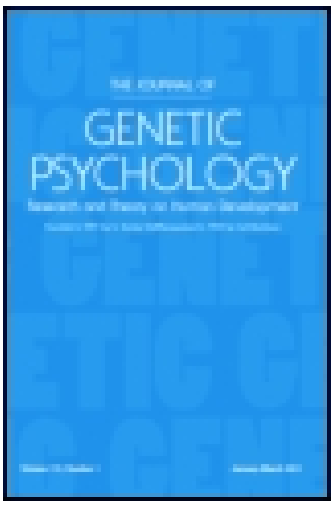

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A History of the Questionnaire Method of Research in Psychology

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A HISTORY OF THE QUESTIONNAIRE METHOD OF RESEARCH IN PSYCHOLOGY.

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A large proportion of current psychological literature is based upon data obtained by means of the questionnaire. By many this is regarded as a reliable, scientific method. This consideration alone is a sufficient excuse for the present paper, the purpose of which is: (1) to trace the development of the method, and if possible to find its origin, even though in the attempt we should be led outside of what is, on all sides, recognized as the science of Psychology, and into that of statistics or any other department of knowledge whatsoever; (2) in tracing this development, to point out the various fields of psychological enquiry in which the method has been or is applied. No detailed analysis of the results of the use of the method is contemplated.

First of all our search for its beginning takes us into the history of statistics. The questionnaire is not necessarily a written list of questions. As long as there have been governments and tribes there have been statistics obtained by personal enquiry or by means of a written questionnaire. Perhaps the first body of numerical facts was an enumeration of fighting men.

In 1835 an epoch-making work appeared in France which increased and broadened the interest in statistical knowledge throughout Europe and England. This was Quetelet's "Essai de Physique Sociale," or "Sur l'homme et le developpement de ses faculties." (38.) It was the author's aim to apply the methods founded on observation and calculation to the moral as well as to the physical sciences. This is the beginning of statistics of morals inasmuch as it first takes account of such phenomena as are under the control of man's will. It was translated into German by Riecke (1838), and into English by Knox and Smident (1842). Drobisch, a Herbartian, in 1849 attracted the interest of the scientists of the world to the new science of statistics by an article in "Gersdorf's Reportorium," Leipzig. Finally, in 1864, Adolph Wagner (46) added his powerful influence toward establishing the validity of the statistical method in the study of social phenomena, which of course include voluntary acts in endless variety.

Among the earliest acts of the Statistical Society of London, which was founded in 1838 (the date of the German translation of Quetelet's work), was the appointment of committees to enquire into industrial and social conditions. (30, p. 5.) One of these committees, in 1838, used the first written questionnaire of which I have any record. The committee-men prepared and printed a list of questions "designed to elicit the complete and impartial history of strikes." Earlier than this, however, as in Bristol in 1831 (30, p. 86), house to house canvasses were made to ascertain the condition of the poor. Other committees attempted by the same method, in 1841 and 1842, to determine the state of education among the poor in Kingston-on-Hull.

It is probable that there were some inconspicuous applications of this method at an earlier date than the preceding, for instance, toward the close of the 18th century when the science of statistics began to assume its modern form. Perhaps much earlier than this, for Tacitus tells us that Augustus was the statistician of his 80,000,000 subjects. The ancient Chinese produced elaborate statistical works. It would not be surprising if, in some instances, they collected their material by a method closely analogous to that which we have under discussion. But inasmuch as the questionnaire has been of conspicuous service to Psychology and Education only within the period following the beginning of *Moral-Statistik* with Quetelet, I have thought it would be unprofitable to make a serious attempt at going behind that event.

Edwin Chadwick (10), in 1864, believed that there was a need for knowledge of large groups of children in order to enable school-men to evaluate systems of education. Accordingly he anticipated some modern investigations. He says: "In order to ascertain the results of particular methods of instruction, I sent in some parishes, circular letters to the employers of children, requesting answers to questions as to their experience of them and as to any defaults attributable to education or training for which remedies were needed." He found great differences in the results of teaching among different schools even though the subject matter of the curricula was uniform. The "conditions and manners" of the teachers varied, however, and in this was the secret of the widely differing results of instruction. He proposed a system of school visitation, and declared that from such a plan as he offered "there are already derivable educational statistics . . . . . of a new value to determine the results of educational and training power."

We have no positive evidence that the English statistical work arose from continental influence. It is possible, however, that the translations of Quetelet's work, mentioned above, stimulated investigation in Britain. Neither is there any evi-

dence up to the present that the new science of statistics is supplying a method for Psychology, unless we describe Chadwick's problem as a psychological one, and can show that he was led to it under the influence of statistical science. There is no proof of this further than that the results of his research appeared at a time when the method of statistics was young and flourishing and was attracting wide attention. As far as its time of appearance is indicative of anything, however, it might have been suggested by Berthold Sigismund's "Kind und Welt." The place of this latter work in the development of the questionnaire method will be considered presently.

The method we are discussing was very early applied in the study of childhood.

It was Helvetius' (26) (1715-1771) belief that the genius and the dunce are alike in infancy. The influence of environment in either case produces the final product. If so the genesis of both types is open to observation. Carlyle's suggestion, made a generation later, is, therefore, to the point: "Of a truth it is the duty of all men, especially of all philosophers, to note down with accuracy the characteristic circumstances of their education, what furthered, what hindered, what in any way modified it." (9.)

In 1787 Tiedeman first obeyed the spirit of such a suggestion as this when by systematic observation he gleaned material for a little volume which has been translated into English under the title, "Record of Infant Life" (45). That a strong desire for life histories was abroad at the time is shown in the "Allgemeinen deutchen Bibliothek" (1) (1765-1805), which expressed a wish for a history of all that which has occurred in the soul of a child from its first sensation, or rather from its first movement, to the first use which it makes of its reason. The fulfillment of this wish, it was declared, would spread a brighter light over the ways of the soul than all systems which the philosophers have constructed from the beginning of the world.

All this, together with the interest in children which Pestalozzi had aroused, was sufficient to prepare the way for the work of Berthold Sigismund (1819-1864).

Sigismund was a man of high scholarly attainments. A physician, his health compelled him to give up the practice of his profession. He became a teacher and was always strongly inclined toward the natural sciences, though he made wide excursions into the languages, music, and other forms of art. As a teacher he was interested in children and devoted much of his time to a careful, first-hand observation of their language and movements. Striking individual variations, which appeared to him in the course of these observations, showed the

desirability of wider studies. It is in obedience to a scientific motive that he writes in his introduction to "Kind und Welt"; "I concluded therefore to put together the results of my observations and to send them in copy to several mothers of good judgment, in order to obtain through them a collection of methodical biographies of children, from which, by induction, I might derive those laws of human development for which I had sought in vain in books." (41, p.10.) It was the especial purpose of that little book, as Sigismund says further in the introduction, to create an interest in the special observation and study of childhood. His motive, I have said, was scientific. The method he used and proposed for extended application he regarded as statistical. He says: "Concerning the causes of the early or late unfolding of the mind in particular children, as yet we know nothing at all, naturally, since as yet no one has taken the pains to do the preliminary *statistical* work which is so easily executed. Statistics has in our time done extraordinary things. It has shown how many pounds of flesh a man consumes on the average in England or in Prussia; how long he lives here or there, on the average; how many crimes are committed here or there. If it would also once turn its searching eye upon the development of man!" (41, p.39.) It was Sigismund's wish that a scientific society should be established to apply statistical science to this purpose: the investigation of man's development.

The publication of "Kind und Welt" marks an important epoch in the development of the questionnaire method. In it there is suggested a definite plan for other students to follow. It is not to be inferred, however, that all who employed the method within a few years following, did so under the influence of Berthold Sigismund.

A few years later G. T. Fechner used what seems to be the first questionnaire syllabus applied in the study of adult human psychology. After having observed striking personal differences in memory images and imagination, he determined to conduct a statistical investigation of these images and their individual variations. Enquiries were made (in exactly what form he does not relate) of several well known German scholars, whose names, with an abstract of their replies, are given in the Elemente der Psychophysik. (14.)

This was in 1860. Just seven years later (three years after Chadwick's questionnaire study of educational conditions) Charles Darwin undertook the investigation of a very definite problem by the same method; "Expression of the Emotions in Man and Animals." (12.) The problem was to trace out the genesis of the expression of emotions: is it innate or acquired? It was practically impossible for the author to obtain the data

he needed for the answer of his question by direct observation. He adopted the only alternative that presented itself. Others whom he regarded as reliable observers, at home and abroad, among both civilized and barbarous peoples, made the observations for him, following the directions that were given in his famous questionnaire.

The questions were direct. The respondents were required not to trust their memory but to report only what they observed at the time of answering each question. This requirement, the author says, was fully met by his correspondents. Thus they avoided the serious error which inevitably attaches to reports from memory. One cannot determine from Darwin's discussion of his method in the introduction to his book whether he owes the plan to suggestions from an outside source or whether it is his own device. It is certain, however, that he began his study in 1838, more than thirty years before the publication of his results, and at a time when the statistical method was coming into prominence among scientific men.

Francis Galton applied the method in a new field of Psychology. Two standard works from his hand, and at least one of minor importance, are based upon questionnaire returns. His "English Men of Science" (15), Galton himself tells us was undertaken after he had read M. de Candolle's History of Science and Scientists. (13.) This is a statistical enquiry into the life histories of about two hundred French scientists of the two centuries preceding its publication. The data on which it was based were collected entirely from biographies and society records. It happened that, at the time of its appearance, Galton was working more extensively along a parallel line with the purpose of supplementing his earlier work, "Hereditary Genius." Because of de Candolle's dissent from some of Galton's views on heredity, the little volume, "English Men of Science," was put into print, based upon entirely "new and trustworthy materials." He had addressed copies of a long and tedious questionnaire to scientific men in England for the purpose of obtaining an account of their life histories. The majority of his questions were necessarily indirect. He does not discuss them extensively, neither does he speak of the different senses in which they may have been comprehended by his respondents.

Galton did not anticipate that his method would prove itself so delicate as to show what chances there are that the descendants of a famous physicist will become eminent in the science of physics. He would be satisfied should it show in a more general way that those descendants were likely to become eminent in any field whatever. In this he has apparently succeeded. Th. Ribot, at any rate, says (40) that, in this work, Galton

has succeeded in demonstrating heredity on its most difficult side.

A minor work by the same author appeared in 1888 (16). This was of the same character as Darwin's Expression of the Emotions. It was an investigation of the conditions and signs of fatigue among school children. In this case the questionnaire syllabi were distributed among English teachers. There were no very important results aside from the conclusion that the worry incident to mental work is more productive of fatigue than the work itself, and that break-downs more frequently occur during preparation for a profession than during its practice.

About twenty years after Fechner's enquiry into mental imagery, there occurred another of exactly the same character but more extensive—at least as far as the application of the questionnaire method is concerned. At some length in "Inquiries into Human Faculty" Galton (17) discusses visual memory and mental imagery in general. This chapter is based almost entirely upon a large number of replies to a number of questions that have since become familiar, regarding the imagery of the morning's breakfast table. He had already found that remarkable variations exist in the strength and quality of imagination and of visual memories, and it occurred to him that a statistical enquiry might throw some "light upon more than one psychological problem." Thus it appears that whereas he describes his work as statistical, he aims at Psychology. He does not confine his respondents to reports of their visual images, but they may speak of the auditory, olfactory, gustatory, tactual, and thermal qualities of their mental images as well. His is a less specific syllabus than that used by Darwin in his study of emotions, and those employed by Galton himself in his examination of the natural history of scientists, and of the expression of fatigue. But it enters into introspective Psychology, as Fechner's questions had done before, and, indeed, in at least one instance—when it calls for a full explanation of how far the respondent's mental processes in blindfold chess playing depend upon the use of visual images, and how far otherwise—it requires a delicacy of introspective analysis that can hardly be assumed to lie within the power of those unaccustomed to psychological investigations.

Both Darwin's and Galton's results have amply justified their means. They have made valuable contributions to Anthropology, and Galton especially, to Psychology.

It is probable that the "Inquiries into Human Faculty" had some influence upon the great French physician and writer, Jean Charcot (11). Charcot's scientific interest was very wide. It led him into the same problem with which we have

just now associated the names of Fechner and Galton; mental imagery. He refers to Galton's introduction to the chapter on mental imagery in which variations in memory and imagination are discussed, and adds that in all psychological studies one must defer to experience.

For his own knowledge of these variations, however, he did not depend upon the written questionnaire. Observation by eye and ear was his invariable means of enquiry. Inasmuch as his mode of investigation is that of clinical medicine, it might be called the clinical method of research in Psychology. It is adapted to attacking Psychology from the side of pathology. It investigates any phenomenon presented in an individual of pathological condition which makes it necessary for us to presuppose a peculiar quality of mind.

It is said by Th. Ribot (39) that shortly after Charcot organized the "Société de la Psychologie physiologique," in 1885, the society as a whole undertook to solve the problem of psychological heredity by the method of questionnaire. Charcot himself, however, was concerned in it only as a member of the society and had little confidence in the plan. The returns were found unmanageable on account of their mass and since 1887 they have lain in the dust.

An investigation of habitual movements in writing and drawing by M. Charles Henry (28) is another striking illustration of the application of the questionnaire method to problems in adult human Psychology. It is a question of æsthetics and furnished the cue which led J. Hericourt (29) to study the same problem by means of a more specific questionnaire.

Hericourt asked his respondents for their habitual procedure in tracing a circumference, and, to bring out the connection between each individual's mode of graphically representing figures and his general motor reactions, he required each respondent to add to his reply a few representative lines of his handwriting. Further, in order to make a study of differences in personal error and illusions of sense, each respondent was asked to divide a right angle by eye into four equal parts. He hoped, by this investigation to discover elements which would furnish a basis for the study of writing considered in its connection with the "character of personality." Hericourt, in his instructions to his respondents, insisted upon a very important point; that in meeting each requirement:—to divide a right angle; draw a circle and describe the mode of procedure—draw four radii of this circle from a right angle—give a few lines of natural handwriting—the movements must be made *very quickly*. Otherwise, he believed, he could not discover the habitual procedure but something that is the product of reflection.

A little later than this is an example of a less specific ques-

tionnaire investigation in France, undertaken by the faculty of medicine of Lyons, which was directed by M. LaCassagne (32). The syllabus was distributed through the columns of the Revue Scientifique. The research was intended to be a study of sensation, the quality of memory, and the mode of functioning of the centres of language and ideation. The questions were many and long and the answers difficult even for those who are initiated into psychological research. There were questions designed to bring out the normal or the defective quality of vision and audition; on visual and auditory memory; on memory for tastes and smells; on the manner of thinking, whether by the aid of verbal-auditory, verbal-visual, or verbal-articulatory imagination; on the visual, auditory, or other quality of dreams and hallucinations; on the respondents mental habit—analytic or synthetic. This outline indicates only the ground which the questions cover. It is needless to say that because of the wide range of topics, and the intricate, sometimes vague character of the questions, the proposed investigation was an absolute failure. Not a sufficient number of returns was received to afford a basis for results.

A similar method of distributing questions was adopted by the affiliated English and American societies for Psychical Research (36).

Their question lists are rarely specific. They often consist only in a general invitation to the public, through the publications of the societies, to make any communications they may desire respecting psychic experiences. Thus in the first volume of the Proceedings of the Society for Psychic Research is the following announcement:—"The council desire to conduct their investigation as far as possible through private channels; they invite communications from any person whether intending to join the society or not, who may be disposed to favor them with a record of experiences, or with suggestions for enquiry or experiment." (36, p. 4.) Again, in the same volume, Circular No. 1 entitled "General Work of the Society," we find the following: "We shall be grateful, therefore, to all persons whether members of our society or others, who will *undertake a series* of experiments and will forward the results to us. These results will be collated and summarized, and the whole or a portion of the evidence will be eventually published, together with any general conclusions and observations that may be suggested by it. We must especially urge, however, that those who are willing thus to co-operate with us will accurately record the results of every experiment made; we do not desire selected results." (36, p. 297.)

The committee on spiritualistic phenomena earnestly request similar reports but urge that the respondents should specify

whether the phenomena reported came under the observation of more than one person, and if so, whether their accounts were consistent. An exact description of the conditions of each observation also is requested (36, p. 300).

Ribot says (39) of the French society for Psychic Research that it limits the number of persons to whom questions are sent to twenty-five. The other societies, of which there are several, as at Berlin, Munich, and Stockholm, and the "Société de psychologie physiologique" in France, which has to some extent investigated telepathy, employ no methods different from those which have been mentioned. As W. F. Barrett, then vice-president of the English society, stated in Boston in 1884 (5) the ultimate aim of these societies is to explain thought transference and other phenomena on scientific grounds and not on the supposed supernatural powers of mediums. It is with this ideal in mind that Frank Podmore, in his introduction to "Apparitions and Thought Transference" (35), speaks of the various sources of error in human testimony, and concludes that it is doubtful if we are justified in attaching much weight to the phenomena of telepathic hallucination and clairvoyance "if the alleged observations were incapable of experimental verification." In such a fascinating field of enquiry as this even an indefinite questionnaire is very likely to reap a full harvest of returns from different social strata. For this reason alone discredit easily attaches to the returns and the development of the science of psychology of so-called supernatural phenomena is thereby hindered. Mr. Podmore's attitude is, therefore, especially worthy of a man who claims to belong to the family of scientists. The adoption of this attitude, at least to the extent of applying the questionnaire method, and working up its results with increasing caution, by Genetic Psychologists, marks the progress of this difficult science.

Finally we are ready to speak of this method as it is applied to child study—or Genetic Psychology—in which it attracts most attention among us to-day.

An important early step in this direction has already been mentioned; Sigismund's Kind und Welt. Educational statistics were sorely needed; especially such as should take account not only of the number of children of a given age in and out of school, but of the conditions under which they live and of their stock of ideas. At about the time that Kind und Welt appeared a statistical bureau was founded in Berlin (43) which, in 1862, published a year book of statistics. This publication was temporarily interrupted in 1865. It encouraged educational statistics of all kinds, and those who were interested in computations relating to schools found in it a ready helper.

We have now a series of oral questionnaires covering a wide

range of topics and designed to bring out the contents of children's minds for psychological or pedagogical purposes. The first of these was the work of Prof. Stoy, of Jena, in 1864 (44). A number of children were questioned in his seminary regarding objects in their environment, in order to find not only the extent of their range of ideas, but to arrive at a classification of their interests. This work was carried on for a considerable time, but the results were never published, probably because Prof. Stoy removed to Heidelberg before the matter was in satisfactory condition for the press.

The second attempt was made by the *Berliner pädagogische Verein*. Hartmann (26) is authority for the statement that this work was suggested directly by Sigismund's volume. An anonymous translation (2) of the report, however, attributes it to the influence of Otto Willmann (47) who, in the winter of 1867-1868, lectured on psychology before the *pädagogische Verein*, and one of whose books was read by the society within that season. At any rate, in October, 1869, a circular letter signed by R. Schobert, president of the society, was addressed to all principals of the *Volkschulen* in Berlin. To this letter were appended 75 questions framed with respect to urban conditions in Berlin. It was proposed to discover the contents of the minds of children just entering the schools of the city of Berlin by means of this questionnaire. "It is not at all impossible to investigate the causes—at least partly—to which the dissimilarity of the pupils on the one hand and their similarity on the other may be traced." It was hoped that the answers to these questions would show what related ideas the children possessed. Preliminary enquiries which were made to aid in forming a list of questions showed that a large percentage of urban children have such an inadequate idea of mountain, forest, etc., as to make their instruction difficult, inasmuch as the books and charts in use in the schools at that time were adapted to the needs of rural rather than city children. For this reason the country pupils, when they enter the urban schools, soon surpass their new companions. Of the 84 reports received from school principals in reply to the first questionnaire, thirteen were worthless, and a new list of questions was prepared. This included such as these: How many have brothers and sisters—have servants—have a dog or cat—have a bird—know the colors blue, red, etc.,—have seen a shoemaker—watchmaker—soldier—farmer—pedlar—all at work—how many know how bread is made from grain? In this test fourteen children were present in every case during the quizzing. This suggests the enquiry whether some of the children would not have an advantage over others according as they were questioned last or first. Of the replies to this questionnaire only 1,085 were

thought reliable; 1,153 were open to suspicion. All, however, were used. The work of computation was done by Prof. Bartholomai (4) of the Statistical Bureau of Berlin, who was for many years editor of the mathematical part of Lüben's Jahresbericht, and who later independently published some observations on the results. It was found that boys and girls, home and kindergarten children must be treated differently in school. Girls surpass boys in acquiring those ideas that are most frequently met by young pupils. In general the conclusion was that children were not properly taught in their homes, and that school appliances were ill suited to the scholars in any urban community.

The third study of this kind was made by K. Lange, school director in Plauen, in 1879 (33). As the interest of the *Berlin Verein* lay in discovering what ideas are wanting in the minds of six-year-old pupils, Lange's problem was to find what ideas they possess, because these must furnish the starting point for further education. He says: "It is the sphere of perception especially that is to be most carefully investigated. Far from considering the child's mind a *tabula rasa* the prudent teacher will adapt his instruction to the ideas which the pupils possess, and of them he will make a firm foundation for advanced instruction. He would build upon the sand should he begin by presenting too elementary matter or, should he too optimistically assume that a sufficient foundation has already been laid and teach boldly on that assumption." Further, he says that the school-man is able to work most satisfactorily only when he has at hand comprehensive statistical computations for the purpose of determining what can and what cannot be presupposed when instruction begins.

By the method of oral questionnaire Lange examined 500 pupils of the city of Plauen and 300 from the country schools. He found that the girls had acquired fewer ideas from their environment but that they had a more decided religious disposition than the boys.

This work was the immediate occasion of the study carried out by Hartmann in Annaberg in 1884 (26), although he got his idea originally from Sigismund's *Kind und Welt* — the passage already quoted in which the author expresses his longing for the application of the statistical method to the study of man. This was an examination of 1,312 children aged 5¾ to 6¾ years. Hartmann was working in the interests of a scientific pedagogy. He hoped to establish a good foundation for the first year's instruction and to make possible thereby suitable choice of lesson material such as no text-book at that time presented. He originally had but fourteen questions on his list but later added others from those used by the *Berliner pädago-*

gische Verein in 1869. This work extended over five years, from 1880 to 1884, and the results are published in two editions; the first in 1885, the second in 1890.

While Hartmann was working thus in the Annaberg schools, a similar investigation, begun in 1880, was carried on by President G. S. Hall, in Boston (20). This work was modeled after that in Berlin, but the list of questions, of course, had to be modified to suit the American environment. This was found to be a matter of considerable difficulty but it was executed with great care. The examination was confined to children who were just entering school, and was conducted by teachers of considerable experience in the kindergarten and who therefore might be supposed to be skillful in dealing with children. Proper precautions seem to have been taken in having the teachers report to, and confer frequently with, Dr. Hall. Only three children, instead of fourteen as in Berlin, were present at each examination. The inferences drawn from this investigation are: (1) "There is next to nothing of pedagogic value the knowledge of which it is safe to assume at the outset of school life. (2) The best preparation parents can give their children for good school training is to make them acquainted with natural objects, especially with the sights and sounds of the country, and send them to good and hygienic, as distinguished from the most fashionable kindergartens. (3) Every teacher on starting with a new class or in a new locality, to make sure that his efforts along some lines are not utterly lost, should undertake to explore children's minds with all the tact and ingenuity he can command and acquire, to determine exactly what is already known; and every normal-school pupil should undertake work of the same kind as an essential part of his training. (4) The concepts which are most common in the children of a given locality are the earliest to be acquired, while the rarer ones are later." The work was laborious. It involved about fifty thousand items in all. It confirmed earlier reports concerning the difference in mental content between boys and girls, declared the advantage of the kindergarten child over his companions who entered the schools from the home, and the superiority in equipment of the country pupil over the child from the city. In many ways this justifies itself as a work worthy of attention and imitation. It was undertaken, the author says, principally for its practical application in education.

The large percentage of Boston children who did not possess the ideas sought for is surprising.

In 1883, after Supt. J. M. Greenwood (18) of Kansas City, Mo., had read Dr. Hall's original report of this investigation, which appeared in the Princeton Review, he undertook the

solution of the same problem by the same method of oral questionnaire using sixty-nine questions from Dr. Hall's list. He anticipated that children of six years would be found much better stocked with ideas than Dr. Hall's results would indicate, and indeed his figures do show a much fuller mental content in the case of 678 pupils of the lowest primary class of his city than Dr. Hall found in Boston children. It must be considered, however, that his inquiry was made in March, April and May so that one cannot determine how much of the richer content is due to the school influences of the five preceding months. In questionnaire work the conditions of observation must be as carefully guarded as in other forms of scientific research.

This concludes our account of the oral questionnaire. For the most part it has been used for practical purposes in educational work. We shall now speak of the specific questionnaire syllabus as applied in the study of Genetic Psychology—the form with which readers are most familiar at present.

We have seen that Fechner in his study of mental imagery, Darwin in his study of emotions, and Galton in "Inquiries into Human Faculty," as well as Hericourt in his investigation into the character of hand movements in writing and drawing, used the specific questionnaire. All these were problems concerned with adult human psychology.

As Dr. Hall has said (20), one of the requisites for successful investigation is to have a definite problem in view. It is to him more than to any other, that we owe the development of the specific questionnaire syllabus in the study of children with a view to obtaining the data for a systematic Genetic Psychology.

A comprehensive syllabus for child study published by him in 1887, was found too cumbersome for practical use. Miss Wiltse's study of children's lies (48), which appeared in 1882, is one of the first contributions in America growing out of a specific syllabus.

In an article on the "Moral and Religious Training of Children" (22), Dr. Hall first drew attention to the interrelation of adolescence, education and religion. Another article by Dr. Burnham in the *Pedagogical Seminary*, entitled "The Study of Adolescence" (8), went far in turning the minds of educators and psychologists toward this fruitful but uncultivated field—the psychology of the youth.

These were the beginnings of important articles and books on religious psychology, many of them products of the specific questionnaire. Prominent among these are Professor Leuba's paper on the "Psychology of Religious Phenomena" (34), and Starbuck's "Psychology of Religion" (42).

Such an immeasurable field as is suggested by the terms

"Adolescence" and "Religious Psychology" can be covered only under the condition of organization for the work. In an editorial in the *Pedagogical Seminary*, Dr. Hall (23) in commenting on the organization of the National Society for Child Study, which was founded in Chicago in the summer of 1893, suggests that, since no one alone can cover the whole field, it would be wise for each student who is interested to enter into correspondence with a specialist in one definite subject named by the society, and to work only under his advice. Just a year later Dr. Hall himself, in response to requests from many inquirers, published fifteen specific questionnaire syllabi. This reflects a demand for specialized investigation.

These syllabi were circulated in all parts of the country and over twenty thousand returns were received, not all of which have yet been sifted out for publication. The subjects of investigation for which these syllabi were designed, were as follows:— (1) Anger; (2) Dolls; (3) Crying and laughing; (4) Toys and playthings; (5) Folk-lore among children; (6) Early forms of vocal expression; (7) The early Sense of Self; (8) Fears in Childhood and Youth; (9) Some common Traits and Habits; (10) Some common Automatisms, Nerve Signs etc.; (11) Feeling for objects of inanimate nature; (12) Feeling for objects of animate nature; (13) Children's appetites for foods; (14) Affection and its opposite states in children; (15) Moral and Religious experiences.

Most of the contributions from Dr. Hall and his students in Clark University, including the studies of children's pets, the moon in child thought, the study of children's curiosity, and their attitude toward flowers, belong at one place or another in this classification.

The systematization of this work by the creation of these specific questionnaire syllabi was followed by an editorial in the *Pedagogical Seminary* in which Dr. Hall declares (24): "Our programme is to gradually centre all study of Psychology, Philosophy, Ethics and perhaps other cognate branches about child study. This is not only in accordance with the evolutionary tendencies increasingly dominant in nearly every other field, but it will save the philosophical side of pedagogy from its present decline, and place education for the first time on a scientific basis and be the centre around which the education of the future will be centred."

The contents of the *Pedagogical Seminary* and *American Journal of Psychology* throughout the years following this declaration, show how thoroughly the plan is being carrried out.

Most of this work has an anthropological flavor. Its authors describe it as Genetic Psychology, and it must, therefore, reflect much of the social and private life of primitive man. In

an editorial in the *Pedagogical Seminary* President Hall says: (25) "Closely connected with anthropology is Genetic Psychology and exact and careful child study by scientific observers. . . . Not only is it (child study) repeating stage by stage the history of the laboratory movement, but marking, as it does, the first advent of evolution in the study of the soul, it promises to equal the latter in importance, and to relegate much of the present adult psychology to those pages of history which preserve the aberrations and over-subtleties of vigorous but misdirected minds."

In keeping with what are conceived as the anthropological connections of Genetic Psychology many of those who have made contributions in this field since 1895 have discussed at great length the customs of primitive people, and have pointed out parallels between the behavior of these races and that of children in our own land, at different stages of development. A notable example is Dr. Hall's "Study of Fears" (21).

The more numerous the parallels found in a study of questionnaire returns and of the customs of ancient peoples or of barbarians of to-day, the more plausible is the theory of psychical evolution and of the recapitulation in the individual of the racial stages of development. The theory of mental recapitulation was not boldly stated at the outset of these questionnaire studies in Genetic Psychology, but is more or less in the background of some of the published results of the earlier investigations. In his report on the mental contents of Boston children Dr. Hall says (20): "We cannot accept without many qualifications the evolutionary dictum that the child's mental development should repeat that of the race." Considerably later one of his pupils employed the questionnaire to unearth some evidence on this point. J. O. Quantz, in his study of "Dendro-Psychoses," says (38): "If present circumstances were not a sufficient reason for present thoughts and feelings, then mind must have been, in some period of its evolution, subject to influences which left an impress that developed into more definite forms of instinct or action. It is not to be expected that any of these can be traced with certainty to its source."

In a study of "Hydro-Psychoses," by F. E. Bolton (6), a year later, mental recapitulation is again referred to as a guiding line for teachers, but it has never been claimed, even by the most enthusiastic, that it can be relied upon absolutely. Cephas Guillet, for instance, says in a long and sensible article on "Recapitulation and Education" (19): "It is earnestly to be hoped, however, that even after these recapitulatory stages have been established, it will not be attempted to make a stereotyped curriculum of them. For children show all

kinds of irregularities of development of which the teacher is bound to take account."

A very interesting form of questionnaire investigation is that in which the compositions and drawings of children are compared and sifted for the purpose of discovering their interests and inclinations. This advantage is claimed for the method—that by it the student is more likely to get at the spontaneous responses of the child than by other means. On this point, however, just as in studies by the usual form of the questionnaire, much depends upon the way in which the questions or the task of writing or drawing are presented to the respondents. Among those who have made contributions of material gained by this method are Sophie Bryant (7)—who undertook her work at the suggestion of Francis Galton, and Professor Barnes (3)—the most productive of all.

We have found that the questionnaire method probably had its rise in statistical science; that it was applied first to the collection of mere educational statistics; that Sigismund, in the second place, with a scientific motive, used it in determining the order of mental development in children; that in the hands of Darwin, Galton, and Fechner it has served the ends of Anthropology and of adult human Psychology, and that, finally, its application has been extended to the intricate problems of mental heredity and of Genetic Psychology in general; problems that are beyond the reach of the usual experimental methods. No scientific method has been perfected at a single bound. There is no editorial expression or contribution in those Journals which are looked upon as the especial media for the dissemination of the results of questionnaire studies, to indicate that even the most ardent supporters of the method consider it as an exception to the general rule. Only an impartial critical examination of the material and results of a number of representative contributions will suffice to discover its shortcomings and the full extent of its validity. Certain it is that no other event since the appearance of the *Psychophysik* has so much quickened interest in the science of Psychology as the latest development of the method of the questionnaire.

BIBLIOGRAPHY.

1. Allgemeine, deutsche Bibliothek. (See Dessoir, M. Geschichte der neuen deutschen Psychologie.) Berlin, 1902. p. 546.
2. ANONYMOUS. The first Comprehensive Attempts at Child Study. U. S. Comm. of Educ. Report, 1901. Vol. 1, pp. 709-729. (Trans. from Berlin Stadtisches Jahrbuch, 1870.)
3. BARNES, EARL. Punishment as seen by Children. *Ped. Sem.*, Oct., 1895, Vol. 3, pp. 235-245.
4. BARTHOLOMAI, F. Allgemeine Schul-zeitung, 1879, p. 327.

5. BARRETT, W. F. Psychical Research in America. Science, 2nd Ser., Vol. 4, p. 359.
6. BOLTON, F. E. Hydro-psychoses. *Amer. Jour. of Psy.*, Jan. 1899, Vol. 10, pp. 169-227.
7. BRYANT, S. See Wiltse, S. E., History of Child Study, *infra*.
8. BURNHAM, W. H. Study of Adolescence. *Ped. Sem.*, June, 1891 Vol. 1, pp. 174-195.
9. CARLYLE, F. Sartor Resartus. Bk. 2, Chap. 2. (See Galton, F. English Men of Science, 1875, Preface.)
10. CHADWICK, F. Jour. of the Statist. Soc., London, Vol. 27, p. 26.
11. CHARCOT, J. M. Diseases of the Nervous System. Complete Works, Vol. 3, Lecture 13, pp. 151 ff. (Eng. Tr. by Thomas Saville, London, 1889.)
12. DARWIN, C. Expression of the Emotions in Man and Animals. N. Y., D. Appleton & Co., 374 pp., 1873. See especially p. 15.
13. DE CANDOLLE, A. Histoire des Sciences et des Savants depuis deux Siecles, Geneva, 1873.
14. FECHNER, G. T. Elemente d. Psychophysik. Leipzig, Breitkopf, 1889, Vol. 2, pp. 477 ff.
15. GALTON, F. English Men of Science. London, Macmillan Co., 1874, 270 pp. See pref. and apx.
16. ——. Remarks on Replies by Teachers to Questions Respecting Mental Fatigue. Jour. Anthrop. Inst., 1889, Vol. 18, pp. 157-167.
17. ——. Inquiries into Human Faculty. London, Macmillan Co., 1883. See pp. 83 ff.; also Apx. F.
18. GREENWOOD, J. M. What Children Know. Proc. Nat. Educ. Assoc., 1884, pp. 195-198.
19. GUILLET, C. Recapitulation and Education. *Ped. Sem.*, Oct., 1900, Vol. 7, pp. 397-445.
20. HALL, G. S. Contents of Children's Minds on Entering School. *Ped. Sem.*, June, 1891, Vol. 1, pp. 139-173.
21. ——. A Study of Fears. *Amer. Jour. of Psy.*, Jan., 1897, Vol. 8, pp. 147-249.
22. ——. Moral and Religious Training of Children and Adolescents. *Ped. Sem.*, June, 1891, Vol. 1, pp. 196-210.
23. ——. Editorial. *Ped. Sem.*, Dec., 1893, Vol. 2, pp. 335-342.
24. ——. Editorial. *Ped. Sem.*, Oct., 1894, Vol. 3, pp. 3-7.
25. ——. Editorial. *Ped. Sem.*, Mar., 1901, Vol. 8, pp. 1-2.
26. HARTMANN, B. Die Analyse des kindlichen Gedankenkreises Annaberg, 1890. See especially p. 49.
27. HELVETIUS. See Galton, F. English Men of Science. Preface.
28. HENRY, C. Le Contraste, le rythme, la mesure. Rev. Philos., Oct., 1889, Vol. 28, pp. 356-381.
29. HERICOURT, J. Project d. Questionnaire Psycho-physique. Rev. Philos., 1890, Vol. 29, pp. 445-448.
30. Journal of the Statistical Society. London Report, Vol. 1, pp. 5 and 86.
31. Journal of the Statistical Society. London, Vol. 4, pp. 85, 156, 212.
32. LACASSAGNE, M. Questionnaire de Psycho-physiologie. Rev. Scient., 1892, Vol. 49, pp. 797-798.
33. LANGE, K. Allgemeine Schulzeitung, 1879, p. 327.
34. LEUBA, J. H. Study in the Psychology of Religious Phenomena. *Amer. Jour. of Psy.*, April, 1896, Vol. 7, pp. 309-385.
35. PODMORE, F. Apparitions and Thought Transference. N. Y., Scribner & Sons, 1895. See pp. 5 ff.

36. Proceedings of the Society for Psychical Research. 1882-1883, Vol. 1, pp. 4, 297 and 300.
37. QUANTZ, J. O. Dendro-psychoses. *Amer. Jour. of Psy.*, July, 1898, Vol. 9, pp. 449-506.
38. QUETELET. Account of his Work. Zeitsch. f. Philos. u. Philosoph. Kritik, 1876, No. 2, by Dr. Rehnisch. (Reviewed in Rev. Philos., Vol. 2, p. 428.)
39. RIBOT, T. Sur la Valeur des Questionnaires en Psychologie. Jour. de Psy., Normale et Pathologique, 1904, Vol. 1, pp. 1-10.
40. —— ——. L' Heredite, 1890, p. 218.
41. SIGISMUND, B. Kind und Welt. Bruo, F., Vieweg, 1856. See Introduction, pp. 10 and 39.
42. STARBUCK, E. D. Psychology of Religion. N. Y., Scribner's Sons, 1899.
43. Statistical Bureau of Berlin. See Prof. Hirschberg's Stadtisches Jahrbuch d. Stadt Berlin, 27 Jahrgang, 1900-1902, Introduction.
44. STOY. See Hartmann, B. Analyse, etc.
45. TIEDEMAN, J. Record of Infant Life. Tr. by Soldan, Syracuse, Bardeen, 1890. See also Dessoir, M. Geschichte der neuen deutschen Psychologie, 1902, p. 546.
46. WAGNER. Die Gesetzmässigkeit in den scheinbar willkürlichen menschlichen Handlungen vom Standpunkte d. Statistik. Hamburg, 1864. See also Zeitsch. f. Philos. u. Philos. Kritik, 1876, No. 2.
47. WILLMANN, O. Pädagogische Vorträge über die Hebung die geistigen Thätigkeit durch den Untericht. Leipzig, Gräbner, 1869. (See Anonymous above.)
48. WILTSE, S. E. Preliminary Sketch of the History of Child Study in America. *Ped. Sem.*, Oct., 1895, Vol. 3. See especially p. 192; also *Amer. Jour. of Psy.*, Jan., 1890, Vol. 3, pp. 59-70.