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THE FOURTH INTERNATIONAL CONGRESS OF PSYCHOLOGY.

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The international gatherings of psychologists, which seem now to have become a permanent institution, originated, it will be remembered, with the Paris Exposition of 1889, when the French authorities arranged for a number of congresses representing various sciences, professions and practical pursuits. The same policy was adopted in connection with the Exposition of 1900, and psychologists were again invited to hold an international congress at Paris. Meanwhile, the idea had taken root, and two other psychological congresses had been held elsewhere—in London (1892) and Munich (1896)—making the present session the fourth of the series. It should not be forgotten, however, that the idea originated in France, and that we are under great obligations to the authorities and psychologists of that country for the practical realization of what was long regarded as merely an impracticable ideal. This obligation is now greatly increased, for the hospitality of the French nation and individuals, and the activity of the committee charged with organizing the Fourth Congress, were chief factors in the success of the meeting.

In attempting an estimate of the value of the Congress and its work, much depends on our conception of the functions of such a gathering. Apart from the reading of papers, the discussion and formal interchange of ideas, and the opportunity

afforded of coming face to face with the personalities behind the writings one has admired or criticised, constitute factors of no small importance in the attraction and helpfulness of these meetings. Indeed, in the minds of some, the order of these elements should be the reverse of that just given. The papers presented (on experimental topics, for example) may or may not furnish contributions of importance to the science. As a rule, their contents, if valuable, are not new; or, if new, are not fully appreciated. The most profitable contributions, with some exceptions, are résumés of results which the authors have recently published, and possibly exploited at their local academies or national associations as well. A new monograph is usually better understood when seen in print than when listened to. But there is not the same facility in discussing the printed as the verbal presentation. A magazine discussion has obvious limitations: it takes time to work out, and where several participate it becomes too complex to follow readily. In a meeting, the more salient points may be easily picked out and discussed by a number of speakers, with profit to themselves and to their audience. For this reason the discussion may be regarded as more important than the papers. The social atmosphere is another element to be considered, and not the least important. This is naturally more varied and more stimulating (if the conditions favor) in the Congress than at local or national meetings. The influence of mere personality should not be underestimated—least of all by psychologists.

Two circumstances militated somewhat against the Paris Congress in these respects. One was the absence of a number of recognized leaders of psychological thought, whose attendance had been counted on. The other was the diversity of language, which proved a greater obstacle than might have been expected.

In view of the relative accessibility of Paris and the added attraction of the Exposition, it was generally believed that the Congress of 1900 would surpass even its immediate predecessor, both in numbers and in the quality of its membership and papers. Moreover the tireless efforts of the Secretary, M. Janet, and the Committee who assisted him, left nothing undone to secure this

result. Any lack that may have been felt in the meetings was certainly not due to any omission on their part. But a number of independent causes seemed to have conspired to deplete the attendance. The hot summer, the crowded state of the city, the high price of living, together with social, personal and other reasons, were responsible for the absence of many prominent foreign psychologists, whose names were actually on the rolls. In this respect the Congress was somewhat disappointing, and probably most so of all to the French psychologists, who were present almost without exception.

The barriers of language, too, were surprisingly strong, considering the growing internationality of psychological literature. A majority of the papers were in French, and even that language was unknown to some of those present, while a large number were obviously unfamiliar with some of the other languages used. This hampered the discussion considerably. It would certainly seem that, with the proceedings limited to the four languages in which most psychological material appears, such a difficulty should not have arisen. However, it must be added, in fairness, that the acoustic properties of the large halls were very poor, and many of the addresses were inaudible except to those quite near the speaker. This made it difficult at best to follow the proceedings carried on in a foreign tongue. But the problem of language remains, and it must be met in connection with future congresses. If the discussion is to attain its end, and if it is to prove really beneficial, it is necessary that every speaker be understood by the greater part of the audience. No international congress can be wholly satisfactory till this condition of affairs is reached. Whether a single medium of communication is better than several, is to-day only a forensic question. The modern tendency is to enlarge the number rather than restrict it. The Russians made an earnest plea at the Congress for the recognition of their tongue. And experience there as elsewhere proved that a speaker was generally more fluent and more easy to follow when using his own language than when attempting to speak in another—that is, of course, to one understanding both. But any multiplication of tongues involves a hardship. At present, 'current' literature on psychology is practically confined

to the four languages used at the Paris Congress; the others, notably Russian, are sealed books to most of us. The most obvious step toward promoting the success of future congresses would be for psychologists to improve their knowledge of these four. And American psychologists have at least as much before them in this respect as any others. The question of Russian will doubtless present itself with growing force in the near future.

This apparently minor matter is dwelt on here because of the notable part it played in the Paris Congress. It was responsible for considerable lack of life in the discussion, besides creating some confusion at times. Few of the papers were discussed, except in the speaker's language, by those accustomed to using it. Lines were unconsciously drawn in this way, and the real benefit of an international gathering was thus to a certain extent lost.

A further difficulty was the absence of printed analyses in the case of many papers; the authors were themselves to blame for this, but the effect was felt largely by the audience. The sectional programs, too, were more in the nature of a Chinese puzzle than a circular intended to impart information. The list of speakers was printed in one place, the titles of communications in another, and the whole so arranged that it was impossible to determine the hour or even the day when a given paper was to be read. But as this was the only shortcoming of the committee it may well be passed over lightly.

Despite these drawbacks the Congress was a notable event and will take a worthy place among its fellows. If it failed to realize every expectation, it certainly did amply repay the attendance. The papers were interesting and the discussions profitable. The topics were drawn from a wide field and covered the latest work and thought in all departments. An admirable proportion was maintained between the different branches, proving the gathering to be quite representative in character. There were over 300 members in attendance, drawn from almost every country. France preponderated in numbers, as was to be expected, while the attendance from Italy and Russia was surprisingly large. The German-speaking coun-

tries were very well represented, and the Anglo-Saxon contingent (largely American) was considerable, though not so numerous as anticipated. The other countries showed well in proportion to their size and distance, even South America, Japan and India sending representatives.

The meetings lasted from August 20th to 25th, with two sessions daily; one was a general session, with select papers from all departments, the other consisted of the sectional meetings. All the sessions were held in the Palais des Congrès, a building within the Exposition grounds, designed especially for the series of congresses held during the year. The card of membership gave admission to the Exposition at all times during the week of the Congress, and afforded reduced rates at many of the 'side-shows.' In this and many other ways attentions of the most generous sort were offered, both by the authorities and by the home members, to their guests.

A reception was given to the members of the Congress by Professor and Mme. Richet, another by Prince Roland Bonaparte, and a third by the Institut Psychique at its headquarters. On two evenings the Committee provided complimentary tickets to theatrical performances in the Exposition. On Thursday a visit was made to Dr. Sollier's Sanatorium, at Boulogne-sur-Seine; and on the 26th Dr. Toulouse invited the Congress to visit the Asylum at Villejuif, and, after showing the guests through the grounds and buildings, gave a successful demonstration of various types of insanity, by practical examples chosen among his patients.

The subscription banquet, Saturday evening, followed the last of the meetings, and was a very pleasant affair. It was held on the first landing of the Eiffel Tower, where the delightful outlook and cool air assisted in making it a fitting termination of the week's labors. The usual complimentary speeches were made by Messrs. Ribot, Ebbinghaus, Sergi, Janet, Lemon, Prince Tarkhanoff and others.

As already said, all sides of psychological thought and investigation were well represented at the Congress. No single subject formed the 'key-note' of the meeting. Undoubtedly the greatest emphasis was laid on problems of theory and nor-

mal experimental research ; but psychical research was also quite prominent. The theoretic problems of psychology received perhaps most attention, all in all. The Section on Introspective Psychology and its Relation to Philosophy (Section II.), presided over by Professor Séailles (Sorbonne), furnished the largest number of papers, and as a rule these were ably written and worthy of careful consideration. The attendance in this section was greater, on the average, than at any of the others. The historical papers of Professors Ribot and Ebbinghaus were presented in general session.

Experimental research may reasonably claim the next place. In addition to the numerous contributions at the special Section on Experimental Psychology and Psycho-physics (III.), under Professor Binet (Sorbonne), one general session was devoted exclusively to papers of this character. The contributions were numerous and covered a great variety of topics, among which may be noted : psycho-physical method, skin sensations, vision, muscle sense, space perception, association, memory, dreams, fatigue, pain, æsthetics and movement. They reflected a healthy activity in research work all along the line, although no discovery of the first magnitude was brought to light. The reports generally embodied the results of careful investigation ; taken together, they represent, so far as the judgment of more critical examination can be anticipated, a distinct contribution to the archives of experimental psychology. The lack of linguistic unity was especially felt in this section ; it interfered with the flow of discussion at points where criticism and reply would have been most profitable to all concerned. So far as it went, the discussion was lively and stimulating.

The interest exhibited in psychical research and spiritualism deserves mention, whatever attitude be taken towards the subject. At the general session set apart for these topics the attendance was apparently at high-water mark. The papers and remarks of Messrs. Flournoy, Myers and Van Eeden commanded general attention, while the presence of the new ' medium,' Mrs. Thompson, did not fail to attract. The most dramatic feature of the Congress also occurred at this session, when Jagadiska Chandra Chatterji (Benares) made an elo-

quent plea for the study, by Western investigators, of the Hindu psychological methods, which deal largely with telepathic phenomena. It would be unfair, however, to lay too much stress on the momentary popularity of this branch at the Congress. The papers, though excellent, were few in number; while many of those attracted to this meeting were 'lay members,' whose interest in matters psychological appeared to be confined to this particular topic. The Section devoted to Hypnotism, Suggestion and Cognate Subjects (V.), under Dr. Bernheim (Nancy), included only a few papers on psychical research.

The other sections were variously attended; as in the departments already mentioned, the papers showed that a satisfactory course of progress was being maintained in these lines. Sections I., on Psychology in Relation to Anatomy and Physiology, and VII., on Comparative Psychology, met in joint session, under Professor Delage (Sorbonne). Section IV., on Pathological Psychology and Psychiatry, was presided over by Dr. Magnan (Paris Academy of Medicine). Section VI., on Social and Criminal Psychology, under Professor Tarde (Collège de France), was least representative, on account of the special congresses on each of these sciences held in Paris during the summer. The work of these sections was supplemented at two of the general sessions.

To speak here of all the 150 or more papers presented at the six general and twenty sectional meetings is manifestly impossible, and it would be difficult to deal fairly with all the sections in a rapid survey. But some of the papers on theoretic and experimental topics should at least be mentioned.

The opening address, by the President, Professor Ribot (Collège de France), was a well-drawn sketch of the development of psychology in the eleven years since the first Paris Congress. Following this was a paper by Professor Ebbinghaus (Breslau), in which he compared psychology at the present day with the state of the science 100 years ago. Both of these addresses were optimistic in character, and formed a suitable introduction to the work of the Congress.

Among the papers dealing with fundamental problems, the most speculative was that of Dr. Aars (Christiania), entitled

'Sieben Rätsel der Psyche.' He dwelt especially on the inexplicable nature of the relation between past and present in consciousness, the irreducible character of sensation, feeling and conation, the antithesis between the processes of assimilation and comparison, and the problem of the projection of subjective experiences into the outer space-world.

In a paper on the relation between mind and body, Dr. Frésc Pavicié (Zagreb) proposes to regard these two, not as distinct in character, with the Dualists, nor as identical, with the Monists, but as constituting the two extremes of a graduated series of forces, the intermediate terms of which are as yet unknown to us. He instances the animal and vegetable worlds as such a series; among their rudimentary forms, the differences are indistinguishable; in their higher developments they are, nevertheless, so distinct that any connection would be impossible to imagine, had we not the intermediate forms before our eyes.

An interesting application of psychological notions to the natural history of philosophy was made in a paper by Freih. v. Ehrenfels (Prag): *Die biologische Wurzel des Positivismus*. He argues that, from a biological standpoint, the positivistic tendency is better adapted to the proper functioning of the *Erkenntnistrieb*, than the metaphysical; it enables us to systematize our knowledge and purposive activity more easily, since it bases the working of the cognitive instinct, in every case, directly on the category of the particular cognition concerned, instead of regarding the latter as derivative. It has therefore a favorable prospect for ultimate survival. Nevertheless, the tendency to speculation is an instinct firmly embedded in human nature, and apparently too deeply ingrained to be uprooted completely. Even an unfavorable biological instinct may bring to light true knowledge.

Professor Marty (Prag), discussing Resemblance, pointed out two distinct meanings of the term: 1. Things which differ so slightly that they are liable to confusion, are called similar; 2. Things which recall one another on account of their agreement. Negatively, the two meanings may be combined: Resemblance is said to exist between things only where the dif-

ference is not so great that the one can no longer recall the other. One thing may recall another without any liability of confusing them. A lesser difference, however, constitutes a *higher degree* of resemblance, and the highest degree of all is where the difference is so slight that one is extremely liable to be mistaken for the other. Resemblance, in either sense, may occur either through partial identity, or without any such identity, as between two species of the same genus. Finally, resemblance is always a matter of immediate perception.

Mlle. Marie Bœuf (Paris), in a contribution to the psychological theory of time, distinguished between *psychological* time (a quality, the degree-of-presence tone), and *linear* time (a quantity, the length and relative positions of events). "Psychological time rests on an intuition;" that is, "the sensation of time originates in the organism"—it is furnished by the organic sense (*sens interne*); in its most primitive form, it is the consciousness of nervous rhythm. From this standpoint, the unit of time is the unit of concentration; when the nervous rhythm is accelerated, the unit of time becomes, not longer, but more 'saturated,' and *vice versa*. This unit varies from species to species; there is, apparently, a tendency to acceleration, in the course of history. The immediate datum is qualitative. The mental *projection* of events along an *extended* time is a subordinate process. Such localization is always with reference to the psychological present; it is merely a translation of nervous tensions "into feelings which give us the various degrees of presence." "The localization in *linear* time, on the other hand, proceeds by means of reference points outside of the self." The conflict between these two schemes gives rise to illusions of time.

Speaking on the Definition of Perception, Professor Claparède (Geneva) began by calling attention to the different usage between English and French on one side and Germans on the other, in the method of subdividing mental phenomena—the former making the distinction between presentation and representation the test, the latter that between simplicity and complexity. Leaving aside questions concerning the genesis of our belief in the external world, the chief characteristics of per-

ception are: 1. That the sense impressions and associated images involved in perception constitute a mental entity. 2. That this mental entity is perceived as not belonging to the self. But mental phenomena include not only the *perception of spatial objects*, but also *mental operations* performed on sense impressions (comparison, sense of duration, etc.). Should the term *perception* be limited to the former class of facts—in which case we could no longer speak of perceiving a difference, or perceiving time? Or should its scope be enlarged so as not to involve any necessary implication of objectivity? If no satisfactory agreement can be reached on this point, it would at least be useful to know how each particular author employs the term.

In a paper entitled: *Le problème de la conscience dans la psychologie expérimentale*, Dr. Philippe (Sorbonne) calls attention to the growing discord between the reports of the individual consciousness and the result of experimental investigation. The length of reaction-times is grossly misjudged; we are 'conscious' of loss of consciousness when only a loss of memory has occurred, etc. Is the science reaching a point where "consciousness must be denied even the cognition of those modifications which constitute its sole *raison d'être*"? The speaker believes that the difficulty arises rather from the faulty classification of mental phenomena which has been handed down to us, and which attributes, not too much, but rather *wrong characteristics* to consciousness.

Among other papers presented may be mentioned those of Professor H. Bergson (Collège de France), on the consciousness of intellectual effort; Dr. Kreibitz (Vienna), on the notion of the 'Sinnestäuschung'; Professor von Tschisch (Jurjeff), on theories of pain; Professor Tisserand (Bourges), comparing the Herbartian with the so-called physiological theory of pleasure; and Dr. Hartenberg (Paris), on the psychology of timidity. Professor Münsterberg (Harvard), who was not down on the program for a paper, also made an address.

To pass on to experimental papers. N. Vaschide (Rumania) reported the results of numerous experiments bearing on the relation between muscular and tactile sensibility. The phe-

nomena investigated were: (1) anatomical and physiological; (2) pathological, and (3) psychological. The general conclusion, which all the results seemed to substantiate, was that the muscle sense is distinct and irreducible; its organ is the muscle itself; and it acts, sensorially and intellectually, like all other senses.

S. Alrutz (Upsala) reported several curious phenomena relating to the temperature senses, distinguishing between warmth, cold, heat, pain, burning and smarting sensations.

Dr. P. Mentz (Leipzig) indicated the results of experiments on the comparative saturation of various parts of the spectrum, by direct comparison, using the Method of the Fourth Proportional, with differences slightly above the threshold. The points of maximal saturation thus obtained coincide with the 'purest colors' obtained with other well-known methods. The number of maximal points is of considerable theoretic interest; here, however, the disturbing effects of suggestion and contrast were felt, as well as an uncertainty arising from the difficulty of determining the *direction* of difference with such slight differences as those used. Apart from this, the position of the maxima along the spectrum was satisfactorily determined. The method, said the speaker, might with advantage be used with the doubtful colors in cases of color-blindness. In the same line, Professor Scripture (Yale) exhibited and demonstrated his new apparatus for testing color-blindness.

A paper by Professor Stratton (California), read in his absence by Dr. Woodworth, reported the determination of the *minimum visibile* by a new method. Lines were placed end to end instead of side by side. The threshold value was found to be about 7" of arc instead of 50"-60", as given by the usual method. These results seem to make it "necessary to modify our conception of the spatial signs here, since the above measurements are considerably less than the distance apart of the sensory elements in the retina, and less than can well be accounted for by the muscular apparatus of the eye."

L. Marillier and Dr. Philippe (Sorbonne) announced a set of new æsthesiometric measurements. These were performed on four subjects, over the entire body, so as to furnish a complete to-

pographical chart of space sensibility. Weber's compasses were used, with points of various forms. The measurements were taken along two vertical lines, one on each side of the body, in front, reaching from the shoulder to the great toe; two corresponding lines on the back; an internal and external line on each arm, and two median vertical lines, back and front. The hands and feet were carefully explored, and in other regions transverse measurements were taken in sufficient number to indicate the entire topography. Incidentally, it was found that with two compass points of different character the subject observed a distinction at distances far below the ordinary threshold; the points were often perceived as qualitatively distinct, even where they were not locally distinguished.

In connection with these researches may be mentioned the paper of Professor Külpe (Würzburg) on the relation of the least perceptible difference to differences above the threshold.

Professor Monroe (Westfield, Mass.) reported experiments proving the existence of olfactory images in dreams. Professor Tarkhanoff (St. Petersburg) described certain hallucinations observed in frogs under the influence of ether.

Mlle. Joteyko (Brussels) presented two papers on the subject of fatigue. Her experiments with the ergograph led to the conclusion that 'the motor centers resist fatigue incomparably better than the terminal organs.' The theory of the central origin of motor exhaustion is therefore not confirmed experimentally; all the researches pointed to the peripheral origin of motor fatigue—through the exhaustion, not of the contractile substance, but of the intra-muscular nerve-endings. In her other paper, Mlle. Joteyko applied these results to a theory of the biological value of fatigue, as a means of defense on the part of the organism. Three modes of defense were noted: immediate (peripheral paralysis), preventive (sense of fatigue), and consequential (habituation, rendering the organism more capable of resisting fatigue).

Professor Sommer (Giessen) demonstrated several new apparatus. He exhibited two pieces for the graphic representation of movements in all three dimensions—one for the finer movements of the finger, the other for movements of the lower limbs.

A third apparatus was designed to measure the pupillary reflex under varying degrees of light stimulation.

In the line of Child Psychology, Professor Netchaëff (St. Petersburg) reported a series of observations on the development of memory among school children. Six hundred and eighty-seven scholars of both sexes, between the ages of nine and eighteen, were examined. The tests included memory for objects, sounds, numbers and words representing various classes of sensations and abstract ideas. A steady growth of memory with years was observed in almost all these respects, which was somewhat checked, however, during the period of puberty. A marked difference was found between the various classes of stimuli, and according to the meaning of the word. The boys showed a relatively better memory for objects and sounds, the girls for numbers and words.

N. Vaschide reported some experiments and observations on the constructive imagination in children. The principal subject was carefully studied from the age of six months to four years. The results obtained from him were supplemented by observations on twelve children of both sexes from three to four years of age.

Professor Bryan (Indiana) reported his experiments upon the recently discovered arithmetical prodigy, and Professor Richet (Paris) exhibited a remarkable musical precocity of the age of four.

Miss Paget and Miss Anstruther-Thomson (London) reported the results of an investigation on the rôle of the motor element in the æsthetics of vision. They found that the æsthetic pleasantness or unpleasantness of visual objects depended not only on the activity of the visual organ and the associated muscular processes, but also on the functions of respiration, circulation, equilibrium and internal motor adjustment. The sensations accompanying these are not the effect of the emotion, but rather its cause and explanation, or possibly they constitute the emotion itself. They accompany the activity of the eye, giving the qualities of linear direction and space relation, and all the rhythmic qualities of visual space generally. The presence of these motor elements is discovered by the examination

of various sorts of sensation, some of which are apparent in the metaphors applied to visual sensations, while many others can only be brought to light by experiment. The speakers presented a *questionnaire* on the topic, by means of which they propose to enlarge the scope of their investigation.

The next Congress was announced to meet at Rome in 1904, under the presidency of Professor Sergi, and an international committee was formed to organize and carry out the arrangements.

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