

considerations. Its recognition of 'sub-conscious' as well as of 'conscious' sensations is mainly founded (p. 536, p. 540 *seq.*) on Leibniz's law of continuity. Its conception of the complexity of sensations involves the doctrine — abundantly refuted by James, by Külpe and by many others — that psychical and physical complexity are completely parallel. Its treatment of 'affinity' — a conception covering what are generally known as association and apperception — is a mere restatement of the dogma of associationism.

In more detail, the writers distinguish the 'internal' and the 'external' sensations as sub-classes of 'the conscious sensation or elementary psychical phenomenon'; and they enumerate (p. 537) as the 'fundamental and irreducible characteristics' of all states of consciousness (1) intensity, (2) affectivity, (3) objectivation, and (4) affinity. It is obvious that these characteristics are utterly heterogeneous. 'Intensity,' moreover, is treated not only in its ordinary meaning of sense-intensity, but also as 'personal intensity,' to include both attention and memory. It is certainly confusing to use the word in both these senses; and, furthermore, the conception of 'personal intensity' is far from clear. There is, of course, a significance to one school of psychologists, in the description of attention and memory as peculiarly personal sorts of consciousness, but Toulouse and his colleagues define personality as 'complete synthesis' or aggregation of ideas, and from this point of view memory seems no more 'personal' than perception.

Opinions may differ on the value of the classification proposed, but it can not seriously be maintained that it offers any new or any consistent principle of division; and it is inconceivable that experimental psychology should be in any special manner the gainer from it.

*Einleitung in die allgemeine Theorie der Mannigfaltigkeiten von Bewusstseinsinhalten.* GOTTL. FRIEDR. LIPPS. Philosophische Studien, Festschrift, 1902, II. Theil, pp. 116-151.

Lipps sets out from the conception of thought-activity and thought-object (*Denkthätigkeit und Denkgegenstand*), as implied one by the other, and strictly correlative. The term 'thought' is apparently used as synonym of 'consciousness.' He goes on (§ 6) to distinguish the thought-activity as either (1) mere apprehension (*Erfassen*) or as (2) relation (*Beziehen*). Corresponding with these, in the domain of object-of-thought, he names (1) the content-of-consciousness (*Bewusstseinsinhalt*) and (2) substance, the substratum (*Träger*) of cause and effect. These two, however, he insists, are separated not in reality but only through abstraction (p. 132), so that exclusive reality

can be attributed to neither one. "Therefore," he says (pp. 133-134), "neither the world of contents-of-consciousness nor the world of substances exists for itself alone, but rather both together, interwoven as they are, form the one real world of the objectively existent."

The most interesting application of this doctrine is to the problem of the classification of the sciences. "The natural sciences (pp. 134-135) belong without question to the doctrine of substances, for every nature-object exists as substance (*besteht substanziell*)," that is, as center of forces. Psychology, on the other hand, in the modern sense of the science of what one feels and knows, is the study not of soul-substance but of conscious contents.

The closing sections of the chapter, which compare the simple with the complex object-of-consciousness, are not very closely connected with the rest. They include (1) a forcible exposition of the truth that simplicity or complexity of the conscious content does not imply simplicity or complexity of the bodily accompaniment; (2) a conventional analysis of the content-of-consciousness into quality and extensity; (3) an attempt—unsuccessful in the opinion of the present writer—to show that simplicity and complexity are merely relative terms and that, consequently, all supposedly simple conscious contents are analyzable. From this follows the possibility of a 'psychical atomism' like that advocated by Münsterberg, who, however, is not named here.

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*Physiological Factors of the Attention Process.* (I.) W. McDougall. *Mind*, N. S., No. 43, pp. 316-350.

The writer starts on the assumption that the psychological facts in connection with attention are already pretty thoroughly known and that what is now lacking is to supply the physiological basis for those facts. This he believes to be as completely wanting as the psychological factors are supplied.

The earlier pages of the work are devoted to a brief *résumé* of the current theories. Most of this portion of the paper is devoted to a drastic criticism of Münsterberg's *Aktionstheorie*.

The author's own theory is an application of his neurin hypothesis, published in *Brain* last year. Briefly, nervous action is pictured as the flow of a hypothetical fluid, neurin, through afferent and efferent fibers from sense organs to muscle plates. The flow is checked and regulated by the varying resistances of the synapses, which are pictured as valves that work only in one direction. There are said to