

P. 00850

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reason (intellect) is subordinate to the will, and is to be derived from it.

The term is applied to such systems as Fichte's, with its derivation of knowing from acting, and to Schopenhauer's. See VOLUNTARISM. Cf. Falckenberg, *Hist. of Mod. Philos.* (Index), and Francesco de Sarlo, *Metafisica, scienza e moralità* (1898). (J.D.)

**Para-** [Gr. παρά, beside]: Ger. *para-*; Fr. *para-*; Ital. *para-*. A prefix indicating in pathological terminology a condition deviating from the normal, a perversion; as parasthesia, subjective and abnormal sensation (such as 'tingling' or 'pricking'); paraesthesia, a perverted or morbid taste; paragraphia, the making of mistakes in writing; paralexia, misreading, or difficulty in reading; paraphrasia, incoherent speech. See PARALYSIS, and PARANOIA. (J.J.)

**Paracelsus.** The assumed name of Philippus Aureolus Theophrastus Bombastus von Hohenheim (1493-1541). The son of a physician, he chose the same calling, but wandered about studying the works of alchemists and magicians, gathering information from strange sources as to the art of healing; received the degree M.D.; was military surgeon in Denmark and Italy; professor of medicine and surgery in Basel, 1527; compelled to leave by the Galenic physicians.

**Paradox** [Gr. παρά, contrary to, + δόξα, opinion]: Ger. *paradox* (adj.); Fr. *paradoxe*; Ital. *paradosso*. An opinion surprising or repugnant to an ordinary mind. See De Morgan's *Budget of Paradoxes*. (C.S.P.)

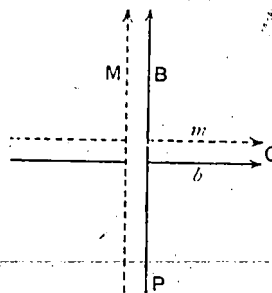
**Parallelism** (in biology) [Gr. παρά + ἄλλω, of one another, from ἄλλος, other]: see CONVERGENCE, and cf. PARALLELISM (psychophysical).

**Parallelism** (psychophysical): Ger. *psychophysischer Parallelismus*; Fr. *parallelisme psychophysique*; Ital. *parallelismo psicofisico*. The affirmation that conscious process varies concomitantly with synchronous process in the nervous system, whether the two processes have a direct causal relation or not.

This is the most generally accepted view of the relation between mind and body at the present day. A good statement of it from the point of view of psychological method is given by G. E. Müller, *Zur Psychophysik der Gesichtsempfindungen*, in *Zeitsch. f. Psychol.* (1896), 1-25, and another by Mach, *Analysis of Sensation*, 26-40 (Eng. trans.). The principle of psychophysical parallelism involves no explanatory theory of the connection between conscious and nervous process.

Those who accept it may differ on this point very widely. A view often associated with it is Automaton Theory; this denies all agency to consciousness. But those who hold psychophysical parallelism are by no means bound down to this opinion. Clifford, for example, writes as follows: 'A feeling of chill made a man run; strictly speaking, the nervous disturbance which coexisted with that feeling of chill made him run, if we want to talk about material facts, or the feeling of chill produced the form of subconsciousness which coexists with the motion of legs, if we want to talk about mental facts' (quoted by James, *Princ. of Psychol.*, i. 132). Cf. AUTOMATIC AND AUTOMATISM (3), DOUBLE ASPECT THEORY, and MIND AND BODY. (G.F.S.-J.M.B.)

The theory may be extended to apply to the concomitance of conscious and vital process in the evolution of organic forms. This



P, phylogeny; O, ontogeny.

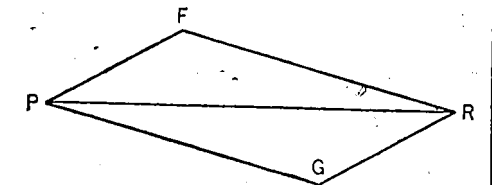
application would constitute a theory which might appropriately be called phylogenetic or racial parallelism, as the application to the individual's psychophysical development constitutes ontogenetic or individual parallelism. The theory in its twofold application thus constitutes a great way of looking at one of the main topics of genetic philosophy. If we represent the mental series by dotted lines (M, m: mind) and the physical by solid lines (B, b: body), the two applications of parallelism at the grade of organic evolution represented by any particular animal, O, may be shown, as in the accompanying diagram (the relative position of the parallels O upon the parallels P).

The discussions of psychophysical parallelism have hitherto been in the main restricted to the problem of individual development. The application to racial evolution, however, is an essential part of the view, and should be given equal attention; for no theory of

the relation of mind and body can be permanently established which does not explain the racial concomitance of the two. Furthermore, the biological theory of descent must recognize mental evolution along with, and possibly as essential to, organic evolution; and the problems thus arising for the psychologist and philosopher cannot be set aside. We may note, for example, the questions of mental recapitulation (q.v.) and morphology generally as bound up with those of comparative brain anatomy and morphology.

**Literature:** besides the titles mentioned, see MIND AND BODY, and the Psychological Index, in loc.; also MASCI, *Il mater. psicofisico* (1901). (J.M.B., G.F.S.)

**Parallelogram of Forces:** Ger. *Parallelogramm der Kräfte*; Fr. *parallelogramme des forces*; Ital. *parallelogramma delle forze*. The law of composition of two forces acting on a point, expressed in this way: If two forces,



represented in intensity and direction by the lines PF and PG, act on a point P, the resultant will be represented in intensity and direction by the diagonal PR of the parallelogram PGRF. (S.N.)

**Paralogism** [Gr. παρά + λόγος, discourse]: Ger. *Paralogismus*; Fr. *paralogisme*; Ital. *paralogismo*. A REASONING (q.v.), especially a syllogistic reasoning, which is logically faulty and deceives the reasoner himself. Cf. FALLACY. (C.S.P.)

**Paralysis** [Gr. παρά + λύσις, a loosing]: Ger. *Paralyse*; Fr. *paralysie*; Ital. *paralisi*. The complete or partial loss of function of the neuro-muscular mechanisms. The term is preferably used for the loss of the power of movement.

Partial loss is called paresis. It may involve single muscles, or those supplied together by one or more nerves (with or without implication of the sensibility of the corresponding sensory surface), or one extremity, or both legs, or the movements of one side. Paralyses are usually distinguished symptomatically as organic and functional, by their nature as sensory and motor, and from the localization of the disorder as peripheral, spinal, infracortical,

cortical, or psychic. The division into organic and functional (according to whether or not there is an anatomically demonstrable lesion) cannot be rigidly maintained, but is sufficiently well established for medical purposes. For these various forms see the textbooks on nervous diseases. Cf. MOVEMENT (disorders of).

When spoken of as a disease, paralysis is ordinarily used as a synonym of *general paralysis*, or *general paresis*, which is both historically and pathologically one of the most interesting of mental diseases. It was first described as a 'disease occurring among the insane,' a fatal complication of mania. The first descriptions of Bayle (1822 and 1825), Georget (1823), Calmeil (1826), and Par-chappe (1832) maintain that it is a special disease from the beginning; the latter called it *folie paralytique*. Baillarger and Requin (1846 and 1847) taught that it was a combination of two diseases, the one affecting the motility, the other affecting the psychic organ. Delasiauve (1851) and Falret (1853) rehabilitated the view of Bayle and Calmeil, which is now universally accepted.

General paralysis is a disease-process which (like locomotor ataxia) is most probably to be regarded as a metasyphilitic degeneration of the nervous system, although the fact that in a certain number of cases the syphilitic origin is denied by the patient cannot be ignored. Alcoholism and unhygienic conditions of life generally are the chief secondary causes. Krafft-Ebing sums up the etiology with the words syphilization and civilization. Most cases occur between the ages of thirty and fifty, but cases during adolescence (probably hereditary syphilis) are not uncommon.

The fundamental characteristic of the disease is a rapid or slow progressive deterioration of memory, working capacity, and judgment, and profound change of character, with a more or less parallel development of tremor and ataxia, especially of speech and writing, and other signs of organic degeneration in the nervous system, and finally profound dementia, with more or less sensory and motor paresis. The entire sequence of symptoms from the first to the almost inevitably fatal ending covers a period of from six months or less to from four to six or more years, with an average duration of thirty-two months. These fundamental traits are frequently, but not always, connected with various accessory psychic symptom-complexes which appear in similar form also in other disease-processes. Hence we recognize a 'simple demented