

the electric field (of strength E) and the magnetic field (of induction B) and has an instantaneous intensity (power per unit area) S given by

$$S = \frac{E \times B}{\mu_0}$$

where μ_0 is the permeability of free space. If B has a sinusoidal time-dependence and E is the average intensity $\langle S \rangle$ is given by

$$\langle S \rangle = \frac{E_0 B_0}{\mu_0}$$

where E_0 and B_0 are the amplitudes of E and B respectively.

Thewlis, ed., *Encyclopaedic Dictionary of Physics* (New York, Oxford and London, 1962) MS

practical criticism (1930s) *Literary Theory* The pragmatic practice first formulated by the English critic Ivor Armstrong Richards (1893–1979), and also associated with Frank Raymond Leavis (1895–1978). It strongly influenced NEW CRITICISM.

(1) Underpinned by the theory of FOUR FUNDAMENTALS OF MEANING, a close analysis of literary texts which aims to retrieve the author's meanings without reference to social and historical context. (2) A classroom and examination practice designed to improve literary reading. (3) More generally, any close reading of an individual literary text.

Richards, *Practical Criticism* (London, 1929) RF

pragmatics theory of play Psychology Proposed by the Swiss psychologist K Groos, this is the theory that play is adaptive and that, especially in lower organisms, play in young animals gives the organism the opportunity to practise and engage in behaviours which in later life will be of use to them.

In relation to humans, practice theory of play predicts that play prepares children for their adult roles. This theory is certainly applicable to lower organisms but is highly controversial when applied to humans; however, the hypothesis has been applied, with limited success, to children's play.

Groos, 'The Play of Mammals: Play and Instinct', *Play*, J S Bruner, A Jolly and K Sylva, eds (Harmondsworth, 1976); first published 1896 NS

pragmatic (or pragmatist) theory of truth Philosophy American scientist and philosopher Charles Sanders Peirce (1839–1914) defined truth as 'the opinion which is fated to be ultimately agreed to by all who investigate' (see Buchler). His disciple William James (1842–1910) held that truth was indeed agreement with reality, but that what counted as 'agreeing with reality' was what worked, in the sense of ultimately satisfying us. He even allowed that our emotions could legitimately influence this (see also EMOTIVE THEORY OF TRUTH).

The theory is particularly tempting in the advanced sciences, where any kind of simple correspondence with reality seems to be precluded by the nature of the concepts and methods involved.

J Buchler, ed., *The Philosophy of Peirce* (1940), 38; W James, *The Meaning of Truth* (1909) ARL

pragmatics (1938) *Linguistics* Defined by the American philosopher C W Morris in 1938, though current and important in linguistics from c.1970. The main sources of modern linguistic pragmatics are in ordinary language philosophy of the 1960s.

Study of the relationships between language and its users, and language and the non-linguistic world: what acts people perform using language, how they use language to link with the world, how they use their MUTUAL KNOWLEDGE to interpret discourse. To be distinguished from SEMANTICS, though the boundary is not sharp. Main theories subsumed in linguistic pragmatics are SPEECH ACTS, CO-OPERATIVE PRINCIPLE, IMPLICATURE, RELEVANCE, POLITENESS, 'DEIXIS', and INFERENCE.

S C Levinson, *Pragmatics* (Cambridge, 1983) RF

pragmatism Philosophy Theory, originally developed by American scientist and philosopher Charles Sanders Peirce (1839–1914), that the meanings of concepts and propositions lay in their possible effects on our experiences and practices. He also originated the PRAGMATIC THEORY OF TRUTH. Peirce was thinking mainly of scientific or intellectual concepts, and called his own view pragmatism when his follower William James (1842–1910) broadened the

theory to cover the senses and emotions. Another notable pragmatist was the American educationalist John Dewey (1859–1952).

More generally, pragmatist features can be found in many philosophers otherwise not closely related, such as Henri Bergson (1859–1941), Frank Plumpton Ramsey (1903–30), and many writers associated with CONVENTIONALISM, INSTRUMENTALISM, OPERATIONALISM and POSITIVISM.

A Rorty, ed., *Pragmatic Philosophy* (1966) ARL

pragnanz Psychology A principle of organization defined by the German psychologist Max Wertheimer (1886–1943).

Wertheimer stated that the perception of experienced forms tends to form a structure, and this structure is the simplest available. Pragnanz failed to account for everything originally accredited to it by Wertheimer, but has been of immense value to the study of sensory perception. Pragnanz is also termed the law of precision. See GESTALT THEORY.

A D Ellis, ed., *A Sourcebook of Gestalt Psychology* (London, 1938) NS

Prague School (founded 1926) *Linguistics* The main early members were: V Mathesius (1882–1946), Roman Jakobson (1896–1982), Nikolay S Trubetzkoy (1890–1938), J Mukarovsky (1891–1975).

Highly productive circle of Czech and Russian scholars, generally functionalist in orientation, responsible for several foundational concepts in linguistics and in literary theory. Very creative in the 1930s, and again active after World War II. See COMMUNICATIVE DYNAMISM, FOREGROUNDING, FUNCTIONAL SENTENCE PERSPECTIVE, MARKEDNESS, POETIC PRINCIPLE, THEME AND RHEME.

J Vachek, *The Linguistic School of Prague* (Bloomington, 1966) RF

Pratt hypothesis (1861) *Geology* John Henry Pratt, the British Archdeacon of Calcutta, calculated that the actual deflection of a surveyor's plumb bob by the mass of the Himalayas was not as much as it should have been if these mountains were simply a mass of rock superimposed on a rigid crust. This

he initially attributed to a curvature of the meridian, but later proposed that it was due to density variations within the crust resulting from differential cooling rates.

Most modern definitions of this hypothesis err from that actually suggested by Pratt. They state that it applies to major differences between the density of rocks in areas of different elevation, with all areas of the Earth having the same weight at a depth of about 110 km. This (revised) model is close to the accepted explanation for continental and oceanic areas' gravitational attraction, but is inadequate when applied to those mountainous areas for which it was originally posited. See also AIRY HYPOTHESIS and ISOSTATIC THEORY.

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prebiotic evolution Biology See PRECELLULAR EVOLUTION.

Prebisch-Singer thesis (1960s) *Economics* Named after Argentine economist Raul Prebisch (1901–86) and German-born British economist Hans Singer (1910–); this asserts that, given the permanent tendency for the terms of trade to go against agricultural products, it is in the interest of developing countries to erect protective tariffs behind which they can industrialize.

R Prebisch, *The Economic Development of Latin America and its Principle Problem* (New York, 1960); H W Singer, 'The Distribution of Gains between Investing and Borrowing Countries', *American Economic Review*, vol. XL (May, 1950), 473–85

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precellular evolution (1860s) *Biology* Also called prebiotic evolution, this theory was fuelled by the work of French chemist and microbiologist Louis Pasteur (1822–95) on spontaneous generation and the publication of English evolutionary theorist Charles Darwin's *Origin of Species* (1859).

The theory asserted that life evolved from lower forms which were based on non-living chemical combinations that arose spontaneously over a long period of time. Specific kinds of precellular evolution have been proposed, including GENOTYPE THEORY,