

Edd. by Alan Bullock and Oliver Stallybrass (Harper/77--but out in '79), this is a simply, clearly written guide to the main cue-terms of interdisciplinary use in thought since WWII. As such, it is very useful in intergrating one's own knowledge. Try the two articles below:

were satisfied. It seems an irresistible consequence of a radically empiricist theory of meaning together with the widespread philosophical assumption, created by the argument from illusion (see ILLUSION), that material objects are not directly perceived (the sense-datum theory). But both of those premises are open to question.

A.O.
Bibli: A. J. Ayer, *The Foundations of Empirical Knowledge* (London and N. Y., 1940).

Phenomenology.

(1) In PHILOSOPHY, a method of enquiry elaborated by Edmund Husserl as a development of his teacher's, Brentano's, conception of 'descriptive', as opposed to 'genetic', PSYCHOLOGY. It takes philosophy to begin from an exact, attentive inspection of one's mental, particularly intellectual, processes in which all assumptions about the causation, consequences, and wider significance of the mental process under inspection are eliminated ('bracketed'). Husserl was insistent that phenomenology is not an empirical technique. It is an *a priori* (see APRIORISM) investigation or scrutiny of ESSENCES or MEANINGS, the objective logical elements in thought that are common to different minds. The phenomenological method has been applied by others, notably Max Scheler, to less austere intellectual subject-matter, and Husserl's pupil Heidegger used it for the investigation of the extreme states of mind in which, according to EXISTENTIALISM, the situation of man in the world is revealed. A.Q.
Bibli: H. Spiegelberg, *The Phenomenological Movement* (2 vols., The Hague, 2nd ed., 1965).

(2) In the PSYCHOLOGY of PERCEPTION, a doctrine or school which postulates that the significant role of SENSE-DATA lies in the form of the object as perceived, however erroneously or distorted, by the individual, and not in the object itself nor in material descriptions, locations, or identifications of the object that follow the rules of physical science. H.L.
Bibli: M. Merleau-Ponty, tr. C. Smith, *Phenomenology of Perception* (London and N. Y., 1962).

(3) In SOCIOLOGY, Husserl's method (see 1, above) was adapted by Alfred Schütz to investigate the assumptions involved in everyday social life. In the

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sociology of KNOWLEDGE, phenomenologists have concentrated on the way in which COMMON-SENSE knowledge about society feeds back, through SOCIAL ACTION, into the moulding of society itself. Other developments range from highly generalized descriptions of how people manage their inter-personal contacts. Critics of phenomenological sociology mistrust its aprioristic tendencies (see APRIORISM), and are impatient with its preference for description and uncontrolled hypothesis over EXPLANATION. When explanations are offered, it is claimed, they are disappointingly trite. J.R.T.
Bibli: Alfred Schütz, tr. G. Walsh and F. Lehnert, *The Phenomenology of the Social World* (Evanston, Ill., 1967).

phenotype, see under GENOTYPE.

phi-phenomenon. A type of illusory perceptual impression of movement produced when, e.g. two stationary, spatially separated lights are flashed in brief succession. 'Phi' refers specifically to an impression of pure movement dissociated from any PERCEPTION of an object. See also GESTALT. I.M.T.H.

Phillips, Gerard (French actor, 1922-59), see under THÉÂTRE NATIONAL POPULAIRE.

Phillips curve. A construction embodying the initial qualitative attempt (1958) by the British economist A. W. Phillips to measure the relationship between UNEMPLOYMENT and INFLATION. The downward-sloping curve implies that as unemployment declines the rate of change in wages and prices rises. THE TERMS OF TRADE differ from one country to the next because of difference of organization in labour and product markets. Broadly speaking, the more concentrated is labour and corporate organization, the higher is the rate of unemployment at which inflation threatens, and the more expensive, in terms of further price increases, is additional reduction of unemployment. R.L.

philology, see under LINGUISTICS.

PROCESS

canbals and missionaries' example, it notes that there are too many missionaries on one side of the river. The program has available a number of *transformation-rules* (see AXIOMATICS) for altering current states in the direction of desired outcomes. The transformation highest on the list is applied; if it does not succeed, G.P.S. then tries out other means of solution, or seeks to change the situation so that other means can be applied. A rule for recognizing dead ends is included so that a stop order can be imposed, after which the next transformation on the list is tried. The 'notice order' for spotting differences between desired outcome and present state, and the order of application of transformations, are HEURISTICS or 'rules of thumb' based on knowledge of how real problem-solvers proceed. It is apparent from this account that such phenomena as *functional fixedness* (being stuck too long with an incorrect hypothesis) and other, human-like errors are committed by the program as a function of its presuppositions, and it is this feature that makes G.P.S. not a 'super-problem-solver' but a recognizably human one.

Current research is concentrated on determining some of the biases inherent in programs designed in this way in order to locate more clearly the nature of the difficulties in human problem-solving. J.S.B.

Bibli: A. Newell and H. A. Simon, *Human Problem-Solving* (Englewood Cliffs, N.J., and Hemel Hempstead, 1972).

process, the, see under ACID-FASCISM.

process control. The use of an on-line COMPUTER to control a continuous process such as a chemical plant. See also COMPUTING. C.S.

process theology. A modern form of Christianity which takes account of modern science, especially the knowledge of EVOLUTION, and which teaches that God's way of working in the world is a slow process, patiently overcoming the elements of chance and evil present in the universe and including in itself all the good that is brought about. The emphasis is on God's involvement rather than his self-sufficiency, his love rather than his omnipotence. The chief philosopher in

this movement was A. N. Whitehead (1861-1947); the chief popularizer of a Christ-centred vision of the meaning of evolution was Pierre Teilhard de Chardin (1881-1955; see TEILHARDIAN). In NEO-ORTHODOXY, however, the position has been attacked as encouraging PAN-THEISM. D.L.E.
Bibli: P. Teilhard de Chardin, tr. B. Wall and others, *The Phenomenon of Man* (London and N. Y., 1959); N. Pitterger, *Process-Thought and Christian Faith* (Wetlyn, Herts., 1968).

producers' goods, see under CONSUMERS' GOODS.

production boundary, see under GNP.

productivists, see under CONSTRUCTIVISM.

productivity. In LINGUISTICS, a major defining characteristic of human language, the creative capacity of language-users to produce and understand an infinite number of sentences using a finite set of grammatical rules. In this respect, human language is often contrasted with the extremely limited range of signals which constitute the communication systems of animals. D.C.

productivity bargaining. A form of collective bargaining developed in Great Britain early in the 1960s, in which higher rates of pay are traded against employees' acceptance of changes in working practices. Traditional working practices and lines of demarcation, together with a recent growth of contrived overtime, had denied management flexibility in the deployment of labour, and led to the under-utilization of hours spent at work. An agreement at the Fawley refinery was widely noticed, and copied, because it indicated that changes in working practices could so raise output per man-hour that higher earnings and shorter hours could be attained without raising unitlabour costs. E.H.P.B.
Bibli: National Board for Prices and Incomes, Report no. 36, *Productivity Agreements* (London, 1967); and see DILUTION OF LABOUR.

profile. Metaphorically, a summary description giving the main features of