

**Life** (spiritual) [ME. *lif*]: Ger. *geistiges Leben*; Fr. *la vie spirituelle*; Ital. *vita spirituale*. (1) That activity of a self-conscious being which gives rise to moral, aesthetic, and religious experiences.

(2) In theology: the divine life which is manifested in Christ, and in which the believer is by faith enabled to participate.

The spiritual life represents the central mystery of the Christian faith. The new birth involves the throwing away of the old carnal life and the putting on of a new life, of which the central principle is to be the spiritual energy of Jesus Christ. In the New Testament the spiritual life is not only represented as ideally rich and complete, but also as in its nature eternal as the life of God.

**Light**: see VISION.

**Light of Nature** [trans. of Lat. *lumen naturae* or *naturale*, a term used by Aquinas, *Summa Theologiae*, Pt. I, qu. 12, art. 13, and elsewhere. It is not necessary to suppose that he borrowed the term from the passage of Aristotle's *De Anima*, 430 a, 14, where the creative intellect is compared with light]: Ger. *natürliches Licht*; Fr. *lumière naturelle* (Pascal); Ital. *lume naturale* (Galileo). A natural power, or instinct, by which men are led to the truth about matters which concern them, in anticipation of experience or revelation. See LUMEN (also for literature).

The phrase is used, in contradistinction to supernatural light. Tucker's *Light of Nature pursued* is a book written as a mild reaction against Locke and the Associationalists in the direction of the philosophy of common sense.

**Light Sensation**: Ger. *Lichtempfindung*; Fr. *sensation lumineuse*; Ital. *sensazione luminosa*. Visual sensation. See VISION. See also BRIGHTNESS.

**Likeness or Resemblance** (consciousness of) [AS. *lic*, in *gelic*, like]: Ger. *Aehnlichkeit*; Fr. *ressemblance*; Ital. *somiglianza*, or *rassomiglianza*. Two mental objects or contents are said to be alike for consciousness when in respect to certain features one might be taken for the other. This is hit off in the current conundrum: 'What is most like a rain-drop?' Answer: 'Another rain-drop.' Such objects are said to have likeness, to be alike, or to resemble each other.

Theories of likeness are based on partial identity of the two mental contents (cf. RESEMBLANCE); partial recognition of one in the other; partial assimilation of one to the other,

or of both to a third; or on an active adjustment to one which holds also in part for the two. The last of these views, to which the writers adhere, is well summed up by Ward: 'Presented objects become related as "like" either in virtue of the active adjustment to a change of impression which their partial assimilation defeats, or in virtue of an anticipated continuance of the impression which this assimilation confirms' (art. Psychology, in *Encyc. Brit.*, 9th ed., xx, 180). Cf. the classification given under RESEMBLANCE, and the topics there referred to.

The case in which two things are alike in all respects—are taken one for the other—is mentioned under INDISCERNIBLES, and DIFFERENCE.

**Limen** [Lat.]: equivalent to THRESHOLD (q. v.), which is already current, and is preferred.

The adjectives 'liminal' (at the threshold), 'subliminal' (below the threshold), and 'supraliminal' (above the threshold) are useful. Cf. LIMITS OF STIMULATION.

**Limitative** [Lat. *limitare*, to enclose]: Ger. *limitativ* (*Urtheil*); Fr. *limitatif*; Ital. *limitativo*. (1) Applied to a third quality of judgments, additional to affirmative and negative. The idea of such a third quality originated among the Romans from the difference between 'homo non est bonus' and 'homo est non bonus,' the latter being the limitative.

(2) Setting limits in the sense (2) given under LIMITING NOTION (q. v.).

It is one of the numerous cases in which accidents of language have affected accepted logical forms without any good reason. Boethius and others applied the infinitation to the subject also, which De Morgan has shown makes a valuable addition to logic. Wolff, however, limited the modification to the predicate, without showing any serious reason for such application. Kant adopted it because it rounded out his triad of categories of quality. His defence, as reported by Jäsche, is that the negative excludes the subject from the sphere of the predicate, while the unendliche, limitative, or infinite judgment puts it into the infinite sphere outside the predicate. It is to be remarked that Kant regards a positive mark as differing *per se* from a negative one, and, in particular, as having a far narrower extension. Like most of the old logicians, he virtually limited the universe of marks to such as arrest our attention. If that had been explicitly and

consistently done, it would have constituted an interesting particular logic, in which there would be a material and not merely formal difference between affirmative and negative facts. It is probable that Kant also understood the affirmative proposition to assert the existence of its subject, while the negative did not do so; so that 'Some phoenixes do not rise from their ashes' would be true, and 'All phoenixes do rise from their ashes' would be false. The limitative judgment would agree with the affirmative in this respect. This was probably his meaning, and he did not observe that his limitative judgment, 'The human soul is immortal (nichtsterblich),' may be construed as equivalent to the conjunctive judgment, 'The human soul is not mortal, and it is the human soul.' No doubt Kant would have seen a world of difference between these two assertions. In that case he should have adopted a fourth quality, 'The human soul is not immortal.'

**Limiting Notion**: Ger. *Grenzbegriff*; Fr. *notion-limite*; Ital. *concetto limite*. (1) A term used by Kant in a single passage of the *Krit. d. reinen Vernunft* (1st ed., 255) to signify that a NOUMENON (q. v. *ad fin.*), which is a thing in itself regarded as an object of reason, is something to which experience cannot attain, but is the inconceivable something behind the phenomenon. The passage reads: 'Der Begriff eines Noumenon ist also bloss ein Grenzbegriff, um die Anmassung der Sinnlichkeit einzuschränken, und also nur von negativem Gebrauche.' (J.M.B.—C.S.P.) (2) The notion of what would be the limiting or extreme case of the application of a truth or principle.

The limiting notion in this sense involves abstraction from the conditions of particular existence; and it also fulfils an ideal. Hence it is both limitative and negative with reference to existence in the sphere of the particular. Cf. LIMITATIVE (2), and LIMITS (in mathematics). The validity of Kant's negative conclusions regarding God, freedom, and immortality turns upon the construction of the negative character attributed to the limiting notion, i. e. upon the theory of reality of the noumenal or universal sort.

**Limits** (in mathematics) [Lat. *limes*, a boundary]: Ger. *Grenze*; Fr. *limite*; Ital. *limite*. A fixed quantity towards which we conceive or prove a variable quantity to approach, so that their difference becomes infinitesimal, though it never entirely disappears, is called a limit.

A simple example is that of the series  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \frac{1}{16} + \dots$ , in which each term is half the preceding one. It is evident that the sum of the terms will always be less than 1 by the last term, thus  $\frac{1}{2} + \frac{1}{4} + \frac{1}{8} = 1 - \frac{1}{8}$ , &c. Now since, by halving a quantity continually, we can make it less than any assignable quantity, it is clear that there is no limit to the possible smallness of the difference between the sum and 1. On the other hand, the sum can never become equal to 1, because we shall always have a difference equal to the last term of the series. In this case the value 1 is said to be the limit of the sum of the series. (S.N.)

**Limits (of Stimulation)** (1) and (2) of Sensation: Ger. *Grenzwerte*; Fr. *étendue*; Ital. *limine*. (1) The limits beyond which, in either direction, stimulation of a sense-organ is ineffective; (2) the boundaries of a sensation series or continuum. (E.B.T.)

In intensity: the extremes of intensity of stimulus that give sensations. The lower limit of sensation, the minimal sensation, the limen or THRESHOLD (q. v.), is the just noticeable intensity of sensation. The upper limit of sensation, or the maximal sensation, is that due to the most intense stimulus. The RANGE (q. v.) of sensation, according to Wundt, is measured by the maximal sensation divided by the threshold.

Wundt introduced the term Reizhöhe for the upper limit. The existence of the lower limit is in part due to the interference of physical and physiological stimuli, in part to physiological inertia and dispersion, and in part may perhaps be regarded as a case of subconscious stimulation. The upper limit is perhaps due to the injury of the sense-organ by intense stimulation. Cf. FECHNER'S LAW, WEBER'S LAW, and PSYCHOPHYSICAL METHODS. (J.M.C.K.C.)

In quality, &c.: the term 'limits of stimulation,' with its correlate 'range of stimulation,' applies also to sensation qualities. We may determine qualitative limits in two different ways. The upper and lower limit of tone stimulation, e. g., may be given as the greatest and least number of vibrations in the second that produce a tone sensation (see Auditory Sensation under HEARING). Or we may inquire as to the least number of vibrations necessary for the cognition of a tone of given vibration rate: this number seems to vary between 2 and 20. Moreover, every sense-organ shows limits with respect to the time intervals of stimulation, while the eye