defined as non-repugnancy to existence. Kant defines it as that which satisfies the formal conditions of experience (*Krit. d. reinen Vernunft*, 1st ed., 218, 234).

The possible proposition, or problematic judgment, as it is called by German logicians, is said by many logicians, especially Sigwart, not to be any proposition at all, because it does not draw a sharp line between truth and falsity. It seems to be necessary to distinguish between a proposition which asserts that under such and such general conditions a certain thing is possible, of which an example is the proposition that of any two collections one is not greater than the other, and a proposition which pretends to be no more than a conjecture. If a conjecture can be absolutely baseless, which may be doubted, a proposition which pretended to be no more than that may be said to be no proposition at all. But it can hardly be maintained that when Poincaré says that there is no physical law whatever which will not be rendered more certain by every new confirmatory experiment, he is depriving those laws of all meaning as propositions.

Logical possibility: that of a hypothesis not involving any self-contradiction.

Mere possibility: that of a state of things which might come to pass, but, in point of fact, never will. In common language, exaggerated to the 'merest possibility.'

Metaphysical possibility ought to mean a possibility of existence, nearly a potentiality; but the phrase does not seem to be used in that sense, but rather in the sense of possibility by supernatural power.

Moral possibility one might expect should be the opposite of moral impossibility, meaning, therefore, something reasonably free from extreme improbability. But, in fact, it seems to be used to mean what is morally permissible.

Physical possibility: (1) that which a knowledge of the laws of nature would not enable a person to be sure was not true; (2) that which might be brought about if psychological and spiritual conditions did not prevent, such as the Pope's pronouncing *ex cathedra* as an article of faith the fallibility of all his own utterances.

Practical possibility: that which lies within the power of a person or combination of persons under external conditions likely to be fulfilled, and questionable chiefly because internal conditions may not be fulfilled.

Proximate possibility. It is very difficult to make out what is meant by this; but the phrase is evidently modelled on *potentia proxima*, which is a state of high preparedness for existence; so that proximate possibility would be a high grade of possibility in a proposition amounting almost to positive assertion.

Real possibility is possibility in the thing, as contradistinguished from mere logical possibility (Scotus, *Opus Oxon.*, I. ii. 7, *Ad secundam probationem maioris*).

Remote possibility: the possibility of a proposition which is far from being positively asserted. Also used in common speech.

Substantive possibility: the admissibility of a pure hypothesis (as illustrated above). (C.S.P.)

Post hoc, ergo propter hoc [Lat.]: see FALLACY.

Postpredicament [Lat. *postpraedicamentum*]: Ger. *Postprädicament*; Fr. *postprédicament*; Ital. *categorie postume*. One of five relations which are considered by Aristotle in the book of *Praedicamenta*, or *Categories*, after he has disposed of the predicaments themselves. They are *opposita* (*ἀντικείμενα*, in cap. x, xi) of four kinds (see OPPOSITION, in logic), *prius* (*πρότερον*, in cap. xii) of five kinds (see PRIOR), *simul* (*ἅμα*, in cap. xiii) of two kinds, *motus* (*κίνησις*, in cap. xiv) of six kinds, and *habere* (*ἔχειν*, in cap. xv) of eight kinds (see POSSESSION).

Abelard gave a special meaning to this word (for which see Prantl, *Gesch. d. Logik*, ii. 169), and also added Antepredicament. (C.S.P.)

Post-selection [Lat. *post* + *selectus*, chosen]: foreign equivalents are not in use. Natural selection of a structure, function, habit, or instinct, effected at a period in the life-history of the individual subsequent to the period when the character selected appears or takes place.

Suggested by Minot. A structure appears in an embryo; but, not benefiting the embryo, selection cannot act until a later stage, in which further development has rendered the structure useful. A parasitic wasp lays an egg in a larva, but without benefit to herself; but the benefit by which selection acts appears in the life of the offspring. These illustrations make the term clearer. Most natural selection is post-selection.

Literature: MINOT, Biol. Centralbl., xv. (1895) 584 (trans. in Amer. Natural., 1895); CH. DARWIN, Origin of Species (1859). (C.S.M.)

Postulate [Lat. *postulatum*, begged, used to translate Gr. *αἴτημα*]: Ger. *Voraussetzung* (the German *Postulat* = *Forderung* is a very different idea from that properly expressed by

the French and English words); Fr. *postulat*; Ital. *postulato*. (1) The earliest definition we have of postulate, which was a technical term of Greek geometers, is by Aristotle. The passage has an appearance of incoherence; it is, however, plain that Aristotle makes a distinction between *hypotheses* and *postulates* which Euclid does not draw, and which is irrelevant. Omitting the distinction, the two have this in common—that they are propositions not necessarily true which are assumed as the bases of deductions.

If we turn to the first book of Euclid's *Elements*, we observe, in the first place, that he calls axioms by the name of common notions, a deliberate choice by him, for Aristotle, before his day, had called them axioms, though Aristotle usually calls them τὰ κοινά, nearly Euclid's name. These matters of common knowledge, according to Euclid's enumeration of them, are not specially geometrical, except that magnitudes superposable are equal (see the *Cent. Dict.*, 'Axiom'). On the other hand, the 'postulates' of Euclid are all geometrical. They are as follows (according to the best MS. and all the evidence):—

(*a*) Between any two points a straight line can be drawn.

(*b*) Any terminated straight line can be prolonged at either end indefinitely.

(*c*) About any point in any plane as centre a circle may be described with any radius.

(*d*) All right angles are equal.

(*e*) If two straight lines in a plane are cut by a third, making the sum of the internal angles on one side less than two right angles, those two straight lines will meet if sufficiently produced.

(*f*) Two straight lines cannot enclose a space in a plane.

(2) Since Wolff it has been very common among Germans, and among English writers who follow them, to define a postulate as an indemonstrable practical proposition. That is to say, it is an indemonstrable *particular* proposition, asserting that some general description of an object *exists* (in the only sense in which pure geometrical forms can be said to exist), in contradistinction to *axioms*, which were supposed to be indemonstrable theoretical (i. e. universal) propositions, asserting that some general description of an object has no existence as a geometrical form.

It is certainly desirable to have two terms bearing these meanings; but it was an utter misunderstanding to suppose that such were the proper meanings either of the word *axiom* or of the word *postulate*. The manner in which this misunderstanding came about is somewhat instructive. An axiom was a perfectly indubitable statement *about things*, in contradistinction to a definition, which cannot be called in question. On the contrary, a postulate was an indemonstrable proposition, not indubitable. There was some question whether certain postulates might not be considered to be axiomatic. When that was done, all the remaining postulates were particular propositions; namely, the first three of Euclid's list. This view was aided by the illogical notion that definitions could be considered as among the foundations of geometrical truth. Some writers went so far as to say that definitions were, or ought to be, the sole foundation of geometry—an extreme nominalistic position. But if definitions are allowed to take such a position, one postulate, at most, suffices, without any axiom; and all the rest of geometry can be thrown into a single definition. Namely, it is only necessary to postulate, say, that a point is possible, and to define a point in such a way as to make it cover the whole of geometry. This was not seen; and the practice of throwing geometrical truth over into definitions so far prevailed as to aid in restricting postulates to particular propositions. That such assumptions of possibility had a markedly different logical function from assumptions of impossibility was sufficiently clear to Wolff and the earlier writers whom he followed to cause him to put forth his definitions of *axiom* and *postulate*; and they recommended themselves all the more, because the postulates had become so familiar that it was no longer recognized that they were open to doubt.

(3) Kant calls his principles of modality 'postulates of empirical thought' in the sense of judgments which are objectively analytical but subjectively synthetical. In fact, the principles as stated by him are not synthetical in any sense whatever, but are mere definitions. (C.S.P.)

Potency: see POTENTIALITY, and POWER.

Potential [Lat. *potens*, capable]: Ger. *potentiell*; Fr. *potentiel*; Ital. *potenziale*. The POTENTIALITY (q.v.) of a thing is said to be potential or to exist potentially. (J.M.B.)

Potential (in physics): Ger. *Potential*, *Potentialfunktion*; Fr. *potentiel*; Ital. *potenziale*. A mathematical quantity or function whose value throughout any region of space in which given forces of attraction and repul-