PROBABLE DEDUCTION — PROBABLE INFERENCE

in fact, which treats all the observations on
the same basis, tends to practically the same
final results if the observations are good. If
they are not, no mean can be relied upon.
The arithmetical mean is the easiest to take.
There is no way of deciding beforehand
whether the method will apply or not in every
case in which the laws governing the production
of the deviations or errors are unknown. There
are cases of observations that follow laws of
their own, and necessitate generalized proba-
bility curves and the superposition of curves.
Their theory has recently been developed by
Karl Pearson.

When deviation is normal, that is, when
Bernoulli's theorem does apply, there may be
two-way deviation, as in the firing of shots at
a target. We then have a probability surface
whose sections perpendicular to the plane of
the two ways of deviation are probability
curves, and whose sections parallel to that
plane are ellipses. The theory was thoroughly
worked out by Rev. In both for thin and
three-way deviation in 1846. The constants
in the equations involve not only the square
of the sum of the deviations, but also sum
of the products, two and two, of the deviations
one way by those in the other ways.

Pearson has extended the theory to n-way
deviation.

Literature: BERNOUlli, Ars Conjectandi
(trans. by Maunder); De MÖVRE, The Doc-
trine of Chance; LAFAGE, Théorie ana-
ymétad des Probabilités; De MORGAN, art.

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could not exist until the conclusion was pro-
babilistically recognized; this is inductive or
experimental inference. Such a relation (a)
may be altogether irrespective of whether the
conclusion is recognized or not, yet each such
process cannot exist until the conditions laid
out in the problem can be satisfied. This
process (b) is a kind of inference
probable conclusion
inference is
probable deduction. Such a relation (c)
may consist merely in the pres-
mised facts having some character which may
agree with, or be in some other relation to,
characters which the concluded facts would
possess if it existed; this is presumptive
inference.

(4) The first case is that in which we begin
by asking how certain certain conditions
will, in the long run of experience, be
followed by a result of a predeterminate descrip-
tion; thus proceeding to note the results as
events of that kind present themselves in
experience; and finally, when a considerable
number of instances have been collected, infer-
ring that the general character of the whole-
less collection of similar events in the course
of experience will be approximately of the
character observed. For that endless series
must have some character; and it would be
absurd to say that experience has a character
which never manifested. But there is no other
way in which the character of that
series can manifest itself than by the endless
series is still incomplete. Therefore, if
the character manifested by the series up to
a certain point is not that character which
the entire series possesses, still the series
goes on, and must eventually be completed;
then it must be completed in a manner
irregularly, towards becoming so; and all the
rest of the character's life will be a continua-
tion of this inferential process. This inference
indeed does not depend on any assumption that
the series will be endless, or that the future
will be like the past, or that nature is uniform,
or upon any material assumption whatever.

(3) Logic imposes upon us two rules in per-
forming this inference. The first is this:
no fact can be seen if it is not visible; and the
second is this: we must make what we
may, in the matter of form or matter, the
to which the question referred.

The second prescription of logic is that
the conclusion be confined strictly to the
question.

PROBABILITY — PROBLEMATIC

suppositions, whose "possibilities" (a word not
clearly distinguished, if at all, from "prob-
bilities") is greater than a given limit, the con-
tingent fact would not be probable; this is
probable deduction. Such a relation (d)
may consist merely in the pre-
mised facts having some character which may
agree with, or be in some other relation to,
characters which the concluded facts would
possess if it existed; this is presumptive
inference.

(5) Probable inference of the second kind
includes those cases in which the facts asserted
in the premises do not compel the truth of the
conclusion, and where the significant
observation has not been suggested by the
consideration of the consequences of the
conclusion would be, but have either suggested
the conclusion or have been remarked during
a search in the facts for features agreeable or
conflicting with the conclusion. The whole
argument then reduces itself to thin, that the
observed facts show that the truth is similar to
the fact asserted in the conclusion. This
may, of course, be reinforced by arguments
of some other kind; but we should begin by
considering the case in which it stands alone.
As an example to fix ideas, suppose that I am
reading a long anonymous poem. As I pro-
ceed, I meet with traits after trait which seems
as if it were written by a woman. In what
way do I do this? Not necessarily, it is not.
To the Catholic doctrine of purgatory is no ex-
ception, such as purgatory is conceived as
being to be a place of purification, not of trial.
The belief is entertained by many, however,
and is not a part of the period of trial of life
and of death, but extends indefinitely into the
future.

The presumptive conclusion is accepted only
problematically, that is, as meriting an
acceptance, a conclusion of a kind of
inference in which the conclusion is not directly
proven by observation. Among the wealth of
methods to which the kind of inference
(perhaps by virtue of its experiential origin)
gives birth, the best deserving of mention is
that which always prefers the hypothesis
which suggests an experiment whose different
possible results appear to be, as nearly as
possible, equally likely.

Proportion (in theology) [Lat. proportion; a part]; Ger. Proportion; Fr. proportion; It. proporzione; Espanol de prove. The state of moral trial in which the soul of man exists during the time that the offer of salvation is open to it.

The belief of the great majority of Chris-
tians is that purgation exists in this life.
The Catholic doctrine of purgatory is no ex-
ception, such as purgatory is conceived to
be a place of purification, not of trial. The
belief is entertained by many, however,
and is not a part of the period of trial of life
and of death, but extends indefinitely into the
future.

Literature: Hodge, Theology; Donker, Christ. Glaubenslehre (1880); Farrar, Eternal Hope; Martzke, Christ. Dog-
matik. (A.D.C.)

Problem [Gr. προβλημα, from προβλεπειν, to look ahead]; see Geb. Problem, which is defined as a problem.

(a) A question set forth for dis-

(b) A demonstrable practical proposition that
something is possible. The solution usually
consists in showing how it is possible and
that it is not experience.

Problematic (for deriv. see Problem; the word was not in use in Gr. or Lat., though it possibly occurs); Ger. Problematischer; Fr. problématique; It. problematico.

The adjective importing the laws of the
three grades of Modality (q.v.) see
also under Possibility in the Kanton and derived systems of logic.

(a) In Greek it would mean pertaining to a problem; but the actual meaning, which is loose, is approximating to the import of an interrogation.

Sigerist and others maintain that problematic propositions are not propositions, because they are not assertory. If they are empty, their denial should be absurd, which does not seem to be the case. It is better to say that whatever passes as a question so much as to merit examination may properly be termed problematic.

(b) Problematism: see SOLIPHISHM.

Problematic Method: see SOLIPHISHM. Procedure (in law) [Lat. procedure, to proceed, through Fr.]: Ger. Rechtsaetzung, Verfahren, Rechtserschliessung; Fr. procedure, procédure. The means provided by law for enforcing rights through the action of judicial or administrative tribunals. It includes all matters of process, pleading, practice, and evidence.

(c) The formal mode in which the functions of any branch of government are discharged. Reform procedure: an American system of simplified or 'Code' pleading, initiated in New York in 1848, and adopted in England by the Judicature Act of 1873. In early societies rights often spring from forms. "It would not be untrue to assert that in one stage of human affairs, rights and duties are rather the adventitious of procedure than procedure a mere appendage to rights and duties." (Maine, Early History of Law, lect. 12, 252.)

Process (L. procedure, to proceed): Ger. Prozess; Fr. procès, processus; Ital. processo, Continuazione, Continuazione (L.C.).

Process (mental): Ger. psychischer Prozess; Fr. processus psychique (or mental); Ital. processo psichico (or mental). Continuance change in consciousness, or in mental disposition, or in both.

The continuity of mental process is of two kinds: temporal continuity and dispositional continuity, or continuity of interest. By temporal continuity is meant the fact that each state passes into that which succeeds it without a break in time. By continuity of interest is meant the fact that successive states of consciousness may be stages in the development of a single or repetitive tendency. Continuity of interest may exist without continuity in time, and continuity in time may exist without continuity of interest. I can to-day resume a problem at the point where I left it yesterday. In spite of the interval of time, yesterday's train of thought and to-day's have continuity of interest. Again, while meditating on my problem my attention may be diverted by the arrival of a visitor. There is temporal discontinuity between my mental processes in attacking the problem and in entertaining my guest; but there is discontinuity of interest. Continuity of interest constitutes in part the bond between one individual consciousness and another, which makes possible which is called the 'collective' mind. I may work at my problem up to a certain point, and then communicate my method and results to another. He may continue the same train of thought, and in his turn communicate his results to me. In this way we may solve the problem into cooperation.

Our minds act as if they were one whole, so far as concerns the attainment of the end which we both pursue. This kind of cooperation in thinking and willing constitutes the psychological basis of human society, and binds together the successive generations of mankind. The process, however, though divided among different minds, is individual, not social. Of SOCIAL ORGANIZATION, SOCIAL PROCESS, and TRADITION.

Other forms of distinguishable mental process, such as cogitation and feeling, have continuity also, which can probably in all cases be reduced to temporal merely (as emotional change produced by external events), or to dispositional merely (as in the continuity of a disturbed cognitive process), or to those two existing together. The further question of the reduction of all phenomenal continuity in change to a principle itself not subject to change, as well as the attempt to consider mental process as an independent system of self-produced changes, leads into metaphysics.

Process (social): see SOCIAL PROCESS.

Proclus (c. 422-500 A.D.) Educated at Alexandria in Lydia, at Alessandria, and at Athens. Became a celebrated teacher, and died at Athens. The last of the Neo-Platonists to exercise any considerable influence. Cf. NEO-PLATONISM, and ALEXANDRIAN SCHOOL.

Procreation: see Reproduction (in biology).

Procrustes. Born on the island of Crete in the 4th century B.C. He was a teacher of rhetoric or the art of living, a sophist, and taught for money at Athens.

Prodigality of Nature. Darwin's expression (Origin of Species) for EXCESS OR