# Intelligence as a Science

A professional logician defines intelligence and draws important conclusions both theoretical and practical.

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Some writers on intelligence problems suggest that intelligence is a science or at leas should be made one. This article examines the question and discusses its practical implications.

We shall need two or three definitions. The first is one for intelligence, and some care must go into its phrasing, for it is central to the argument that follows. In polling some of my professional colleagues, I find no general agreement on the meaning of "intelligence"; each of them tends to particularize his definition so that it covers at best but little more than his own occupational specialty. Each will admit that there are others who engage in activities similar, even very similar, to his, but "what they are doing is not intelligence, strictly speaking." And I find a similar lack of agreement, and of precision, in the literature of intelligence. We must therefore construct our own definition.

The definition of a concept, if the aim is truth and accuracy, is not to be undertaken without due regard for logical principles. Any definition must take the form of a two-part equivalence. The first part is the constant to be defined, or the definiendum, and the second, the definiens, is an arbitrary structure containing only constants whose meaning is either initially clear or previously explained. The definiens, to avoid a vicious circle, must exclude the constant being defined and any other expression previously described with the help of this constant.[1] Further,

if the definition is to be useful, or perhaps even logically sound, it has to define the concept not in terms of its properties, but in terms of the unique set of operations with which it is synonymous.[2]

In constructing a definition for intelligence we must therefore state its *general* and then its *specific* unique set of synonymous operations. These sets derive from the fact that intelligence is, above everything else, a particular kind of human activity. Our definition must be both comprehensive, in that we omit nothing which is a part of intelligence, and exclusive, in that we include nothing which is not a part of intelligence.

The definition here proposed is the following: Intelligence is the *official, secret collection and processing of information on foreign countries to aid in formulating and implementing foreign policy, and the conduct of covert activities abroad to facilitate the implementation of foreign policy.* This definition appears to meet the logical requirements given in the preceding two paragraphs. Its critics will have to demonstrate that the constants in the definiens, the italicized words, are not components, or do not include all the components, of what is, or may be, generally thought of as intelligence. All of these constants refer to activities that are and have been carried out at one time or another under the intelligence banner, and they are sufficiently particularized by their official-secret designation to exclude other categories of human activity.

Another definition we need is for science. A generally accepted definition has it that science is *accumulated knowledge, systematized and formulated with reference to the discovery of general truths or the operation of general laws.*

*If we review these two definitions together, it is apparent that there is nothing in intelligence which precludes its being a science. The unity of science is a matter of methodology, not of subject matter, and intelligence has accumulated knowledge, empirical data, susceptible of systematization and formulation. It therefore can be a science. But an examination of the present state of this accumulation with reference to the discovery of general truths and the operation of general laws leads to the conclusion that intelligence probably has not yet reached that status.*

*If intelligence could be a science, what kind of a science could it be? What developed sciences deal with data similar to the data of intelligence? Is it possible that some developed science, a science that has gone a long way toward finding its general truths and the operations of its general laws, may not have covered all or a very large part of the ground covered by intelligence?*

Answers to the first two questions will throw light on the methodological problems of organizing the data of intelligence and the formulation of its general truths and laws. An affirmative answer to the third question would suggest that it might be redundant to make a separate science of intelligence.

In the taxonomy of science there is one large grouping called the social sciences, or more recently the "policy sciences." The policy sciences deal with the integration of values realized by and embodied in interpersonal relationships. Matching this definition against our definition of intelligence, it is quite clear that nothing in intelligence excludes it from the group of policy sciences as one of their specialized aspects. The general, across-the-board policy science principles or general truths and laws are, then, applicable to intelligence.

Now let us look again at intelligence to see which of its aspects set it apart or distinguish it from some other kind of human activity, or "interpersonal relationships." The more one studies this question, the more apparent it is that if we take away the words "official," "secret," and "covert" from our definition, there is nothing done under the heading of intelligence that is not done in an identical or nearly identical way in the non-intelligence world. But these three modifiers are qualifying and adjectival, rather than fundamental. With this breakdown it is very difficult to see intelligence as a system of related phenomena so specific, separate and irreducible that it must be treated as a separate science. As pointed out above, intelligence can be treated as a separate science. However, if obviously related systems of phenomena, or developed sciences, can be extended to include intelligence, and if the differentiating aspects of intelligence are more qualifying than basic, the development of a science of intelligence becomes altogether redundant.

To suggest that it is redundant and impractical to erect a science of intelligence is not to reject the application of scientific methodology to intelligence, and specifically the acknowledgement and use of the principles of the social sciences applicable to the phenomena of intelligence. Such a rejection would reject rationality and scientific principle as a basis for practice, and substitute intuitive guesses and unanalyzed conjectures. While irrational conduct of intelligence practice, like non-principled behavior generally, may become skillful and may be successful to the extent of attaining particular ends desired, as a rule it can be recommended only as a kind of short-cut in simple situations. When the situation is complicated and the actor is confronted with multiple choices of action, reliance on non-principled behavior introduces an unacceptably high level of probable error.

The propositions advanced above - that it is not profitable to develop intelligence as a separate science because the phenomena with which it deals are covered by the social sciences, and that the only sound practice of intelligence is that based on the scientific method as specifically applied in the social sciences - have important practical implications. The main one of

these is that we must build up within the intelligence community a knowledge of scientific method and the techniques and principles of the policy sciences and must study their application to intelligence problems. We must do this because it is the only way to effect any fundamental improvement in professional intelligence practice.

For the intelligence officer to concern himself with scientific method and its application in the policy sciences and with the application of the principles and techniques of the policy sciences to his work may seem to introduce complexity and irrelevancies into an already complicated business. It may seem "theoretical" in the invidious sense of the word, that is impractical. Yet if he does not do this, he opts for non-principled, irrational activity patterns, and he has no place else to go to find the principles basic to his professional activity.

Since World War II a great deal of progress has been made in finding practical application for improved social science methodology and techniques, progress comparable in quality, if not in breadth and depth of application, to contemporary technical advances in physical science. While most of this progress in practical application has been in the military field (in use of weapons systems as distinguished from weaponry itself, a sub-discipline of physical science and technology), and in economics (applications in business and industry), there has been some attempt at application of the other policy sciences. However, there is a considerable technological lag in adapting new methods to some fields of endeavor that derive their principles from the policy sciences. When one examines some of the work that has been done in such organizations as the Rand Corporation and notes its application to, say, business and industry, one is forced to conclude that kinds of activity similar to intelligence make fruitful use of techniques of which we in the intelligence profession are only dimly aware.

To list in detail new social science techniques which could be of practical use to intelligence would require a thoroughly annotated bibliography of a length beyond the scope of this paper. It may be said here that the progress in this field stems mainly from developments in logic, where it takes such forms as symbolic logic and heuristic science. These developments are basic to the current progress in both the physical and policy sciences. Those interested in this newer logic can consult Hans Reichenbach's The Rise of Scientific Philosophy, reprinted in 1957 in a paperback edition by the University of California Press. As an example of technique derived from the development in logic, one might cite Operations Research, defined as a scientific method of providing executive departments with a quantitative basis for decisions on operations under their control. This technique is described by J. F. McCloskey and Florence N. Trefethen in their Operations Research for Management, published in 1954 by the Johns Hopkins Press. Karl W. Deutsch's Nationalism and Social Communication, Wiley & M. I. T., 1953, is a fine example of how the newer techniques can be applied to the analysis of specific political problems.

*Introducing these new methods and techniques into the intelligence profession will be difficult. Many of them have not yet been processed to a point where they can have direct practical application. As presently stated, they are often unintelligible to any but social sciences experts with a strong methodological or symbolic-logic bent. Other methods, more developed toward the practical, have been evolved for concrete problems which pertain to the intelligence profession only by extension. What is needed in either case, in effect, is to bring together those who are concerned with the formulation of principles and underlying methods and those - the intelligence technicians - who are concerned with practice, so that the latter can communicate their needs. Once the need is perceived, there is no reason why this kind of consultation cannot be arranged. Through such communication we should derive the insights that we require to improve our professional practice.*

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*1 See Tarski, Alfred. Introduction to Logic. New York, Oxford University Press, rev. ed., 1946, p. 35.*

*2 P. W. Bridgeman. "The Logic of Modern Physics" in Readings in the Philosophy of Science, Herbert Feigl and May Broderick, ed. New York: Appleton, Century, Crofts, 1953, pp. 36-7.*

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