THE MARKETING PROFESSION: ANALYTIC, SYNTHETIC AND PRACTICAL

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ABSTRACT

The purpose of this paper is to discuss the basic tenets of the Received View of scientific theory especially as the Received View relates to the three primal activities necessary for theory construction and validation within a discipline. Finally, the authors analyze some of the problems associated with the implementation of the three activities according to the constraints of the Received View.

INTRODUCTION

The question of whether marketing is a science has been discussed by a number of writers. Some have expressed the belief that marketing is not a science (Longman 1971; Oxenfeldt 1961; Sweeney 1972) and that it never will be (Hutchinson 1952; Ross 1977). Others suggest that marketing has the potential to become a science and should be striving in that direction (Alderson and Cox 1948; Bartels 1951; Dawson 1971; Levy 1976; Mills 1961; O'Shaughnessy and Ryan 1979; Taylor 1965). Finally, there are those who maintain that marketing is already a science (Bagozzi 1976; Hunt 1976a, 1976b; Kotler 1972; Robin 1970). This latter view seems to be the general drift in marketing today and thus gives rise to an increasing interest in the development of scientific theory.

The pursuit of marketing theory is important in that it will eventually enable marketing to be more efficient and effective in serving society (Solomon 1979). Given the foregoing assumptions, marketing scientists inevitably face the question of theory formation according to the scientific method. The scientific method of theory development may be more rigorous than any criteria here-tofore applied, but it is not without its own inconsistencies and problems. It is crucial for marketing scientists to recognize the limitations and difficulties that other scientists have identified rather than viewing the scientific method as a foolproof framework for theory building.

This paper addresses the following issues that pertain to marketing metatheory; that is, the theory of theory construction (Bartels 1970):

1. the basic tenets of the Received View governing theory construction by the scientific method.

2. the three basic types of activities—analytic, synthetic, and analytic to practice—necessary for building and validating theory within a discipline.

3. The examination of some representative examples of problems imposed on carrying out the three types of activities according to the dictates of the Received View.

THE RECEIVED VIEW

Beginning in the 1920s it became commonplace for philosophers of science to construct scientific theories as axiomatic calculi which are given a partial observational interpretation by means of correspondence rules (i.e., explicit definitions which coordinate theoretical terms with corresponding combinations of observation terms). This analysis, first named the Received View by Putnam (1962), has been widely assumed by philosophers of science in dealing with other problems in the philosophy of science (Suppe 1974). During the 1950s, however, this analysis began to be the subject of critical attacks challenging its very conception of theories and scientific knowledge. These attacks, centered on both specific features of the Received View and on it as a general philosophy of science, were so successful that by the late 1960s a general consensus had been reached among philosophers of science that the Received View was inadequate as an analysis of scientific theories. These criticisms will be reflected in some of the difficulties in carrying out basic disciplinary activities discussed later in this article.

According to the original version of the Received View, a scientific theory is to be axiomatized in mathematical logic. The axioms of the theory are formulations of scientific laws, and specify relationships holding between the theoretical terms. Theoretical terms are merely abbreviations for phenomenal descriptions (involving only observational terms). Gradually this gave rise to the logical positivist position, central to the more modern Received View, that all meaningful language consists of observation sentences whose only nonlogical components are observation terms and assertions using the theoretical terms explicitly defined in terms of them. Although a number of modifications were made in the Received View, these changes did not seriously affect the basic positivist doctrines, and hence the Received View continues to exert a powerful and prevailing positivistic view.

A number of versions of the Received View were developed (Bergmann 1957; Braithwaite 1953; Duhem 1954; Nagel 1961; Reichenbach 1962; and others), but the changes proposed by Carnap and Hempel seem to have become most prominent. The final version of the Received View can be summarized as scientific theories having a canonical formulation satisfying the following conditions (Suppe 1974):

1. There is first-order language L in terms of which the theory is formulated, and a logical calculus (method of computation in symbolic logic) K defined in terms of L.

2. Nonlogical or descriptive primitive constants are divided into two classes: observation terms and nonobservation or theoretical terms.

3. The language L and calculus K are divided into sub-languages and subcalculi respectively: the observation language, the logically extended observation language (formed by adding quantifiers and other descriptive terms to observations) and the
theoretical language which contains the aforementioned theoretical terms.

4. The observation language consists of concrete observable events or things; the relations and properties of the interpretation must be directly observable and all values are expressed by the observation language.

5. A partial interpretation of the theoretical terms and of the first-order language containing them is provided by the following two kinds of postulates: the theoretical postulates (that is, the axioms of the theory) in which only non-observation or theoretical terms appear, and correspondence rules which are mixed sentences (i.e., containing at least one observation term and one theoretical term).

6. Correspondence rules must satisfy the following conditions:
   a. the set of rules must be finite.
   b. the set of rules must be logically compatible with the axioms of the theory.
   c. the set must contain no extralogical term that does not belong to either the class of observation terms or the class of theoretical terms.
   d. each rule in the set must contain at least one observation term and at least one theoretical term.

According to Suppe (1974) many commonly accepted scientific theories have failed to conform to these rigorous criteria. Furthermore, in spite of the Received View a confusion exists among scientists as to what properly qualifies as a theory. Philosophers of science are divided. Some maintain theories in physics are scientific but those in sociology are not, while others would maintain that all these are as well as Freudian psychology (Gallie 1957; Harrah 1959).

The Received View requires that theory be systematized into a body of empirical knowledge by means of a system of interrelated concepts. This systematic character of theory reflects the following features (Carnap 1963; Copi 1958; Suppe 1974):
1. certain critical concepts are selected as basic.
2. axioms are introduced which specify the relationships between basic concepts.
3. the remaining theoretical concepts are defined in terms of the axioms.
4. the remaining content of the theory is deducible from the axioms and concepts by logical inference.

The foregoing steps in theory construction presuppose an acute understanding of the interrelationships of the theoretical concepts.

Hunt (1976a) has succinctly capsulized the implications of the Received View for the benefit of marketing scholars. The three criteria requisite for theory are (1) a set of systematically related statements including (2) some lawlike generalizations that are (3) empirically testable. These three criteria correspond somewhat roughly to the outputs of the three essential activities which will subsequently be discussed. It should be observed that through these activities the difficulties inherent in operationalizing the constraints imposed by the Received View become apparent.

Every discipline is composed of individuals engaging in each of three basic activities: analytic, synthetic, and/or application to practice. A fully developed discipline is one in which each of these is fairly represented. An overemphasis on one of the activities can lead to a warped view of a particular discipline and may inhibit the possibility of that discipline realizing its potential contribution to society (Cassidy 1962).

Analytic activity involves data collection. The goal is to increase knowledge concerning the particulars in experience, and is analytic in that distinctions are made, data are classified, and observations are reported. In marketing, examples include the classifications of wholesalers or retailers into distinct categories.

The second kind of activity, synthesis, occurs when connections are sought among data, theories or meta-theories—when trends, hypotheses, theories, and laws are derived. The third activity is application to practice, the activity which applies the general or theoretical to the realm of the particular. It is thus in practical application that the results of analytic and synthetic activities are tested for validity.

Generally, the more theoretical departments within education lean toward analytic and synthetic functions, while the technologies emphasize application (Cassidy 1962). The intent of these writers is not to establish mutually exclusive categories, but rather to examine some limitations to performing these necessary functions in accordance with the Received View.

DIFFICULTIES OF THE RECEIVED VIEW

The following objections to operationalizing the Received View are not intended to be exhaustive; they are intended to be somewhat representative of the difficulties encountered by researchers properly following the Received View's prescribed procedure.

Problems in Definition

Logical positivism, in which the Received View is rooted, springs from the empiricist tradition promising answers to two central questions. To one, the semantic-ontological question of what our expressions refer to, empiricism simply points to that entity which is the object of the associated sense impression. Empiricism deals just as comfortably although perhaps not so ably in the area of epistemological questions—how we can know whether a given statement is true. The answer is found in assessing any statement for truth by reference to the sensory experiences we actually have. However, scientists using such terms as "perception," "attitude," and "personality" apparently refer to unobservable things and properties. This makes it unclear what relationship such expressions can have to elements of sensory experience.

Theoretical terms, too, tend to be underdefined in observational language. Papineau's (1979) example of under-definition uses the concept "temperature." This term refers to observable readings on instruments like thermometers. But such a definition only obtains meaning in those special circumstances where a thermometer is applied to the body in question.

In marketing this apparent under-definition of theoretical terms in observation language arises frequently.
(Consider a theoretical term such as "customer." For most, if not all, theoretical terms are dispositional with respect to observations; they specify that certain observable features would be classified if certain phenomena were present. Actual occurrences can readily be reduced to observation terms; it is not clear how potential occurrences can similarly be reduced.

In practice, theoretical terms may also be overdefined by multiple definitions (such as numerous measures of the concept "temperature" or "brand loyalty"). Modern empiricists have tried to deal with these problems of theoretical terms in various ways. However, their proposed recommendations tend to be more confusing than the original problem.

Problem of Correspondence Rules

The underdefinition of theoretical terms means that there is no apparent method of deciding the correctness of applications of those terms to cases where none of the test conditions specified by the relevant correspondence rules obtain. Conversely, and more importantly, over-definition opens the possibility of numerous correspondence rules associated with each theoretical term. Revision of incompatible correspondence rules must be accomplished; yet where are the principles to guide such revisions?

A pragmatic rule of thumb governing this dilemma would be to choose those rules which best fit our postulates relating that theoretical term to others. But how then are those theoretical postulates themselves to be assessed? We now have the danger that different theoreticians will selectively choose to interpret observations in ways required to legitimize their respective theoretical claims.

Theory-Dependence of Observation

The theory-dependence of observation alludes to the possibility that people accepting different theories will, as a result, have qualitatively different sensory experience. Some writers (Hansen 1958; Kuhn 1972; Feyerabend 1965a) seem to suggest that any authoritative observational language is impossible because all observational experiences are so theory-dependent. One simple solution proposed by Feyerabend (1965a) and later repeated by Papineau (1979) is to repudiate a theory if its predictions are not borne out by observations. However, a necessary constraint on the observation is that it come from people who do not know the theory being evaluated. Feyerabend (1975) himself has come to realize that our sensory systems are not entirely at the mercy of our theoretical presuppositions. Nevertheless, certain questions concerning the essential objectivity of the observer have yet to be resolved.

Problems in Theory Reduction

Theory reduction is not treated directly by the Received View, but derives certain implications from it. Theory reduction, for empirical test (or practical application) may receive a high degree of confirmation if it passes a sufficient variety of such tests and if the tests are of sufficient rigor. In actuality, science is full of theories which once were (seemingly) highly confirmed and which have subsequently been discarded. Sometimes a theory is expanded to encompass a larger system of phenomena; or, conversely, found to be limited to a narrower scope than previously supposed. Expanded and updated versions of the theory and/or subtheories tend to be characterized by sets of statements employing a vocabulary homogeneous with existing theory (Nagel 1961). This may result in more closely related, comprehensive theories or, on the other hand, the perpetuation of scientific theory that is at best inadequate and at worst erroneous.

Secondly, a given Theory A may be absorbed into a more inclusive or comprehensive Theory B. Theory A being reduced employs a number of distinctive descriptives that are not included in the basic theoretical terms or in the associated rules of correspondence of Theory B. This absence of common theoretical terminology makes this form of reduction problematic. Nagel (1961) suggests the following conditions to be met in order to achieve successful reduction:

1. theoretical terms for both theories must be unambiguously and appropriately fixed.
2. assumptions must be introduced which postulate relations for terms in Theory A which are subsequently introduced in Theory B.
3. all of the laws of the secondary Theory A must be logically derivable from the theoretical premises and their associated correspondence rules in the primary theory B.
4. these additional assumptions used must have adequate evidential support.

CONCLUSIONS

In approaching the science of marketing with increased rigor, it behooves marketing scientists to pause to consider the foundations from which scientific methodology springs and to also be continually aware of some practical difficulties found in the method itself.

In this paper several problems with the Received View were identified: problems in definition of both observation and theoretical terms, problems with correspondence rules, problems with the Double Language Model, the theory-dependence of observation, and problems in theory reduction. These constitute a representative example of issues facing both philosophers of science who attempt to develop an acceptable framework for theory construction and members of a discipline who are engaged in theory development and testing. Identification of these issues will serve to alert marketing scientists to some metatheoretical problems yet to be resolved.

REFERENCES


Bergmann, Gustav (1957), Philosophy of Science, Madison, Wisconsin: University of Wisconsin Press.


Gallie, W. B. (1957), "What Makes a Subject Scientific?", British Journal for the Philosophy of Science, 8, 118-139.

Hanson, N. (1958), Patterns of Discovery, Cambridge, Massachusetts: Cambridge University Press.


Hunt, S. D. (1976a), Marketing Theory, Columbus, Ohio: Grid, Inc.


