



Is Marketing a Science: Debate Revisited

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ABSTRACT

In pursuance of determining the scientific status of marketing, this article first determines what constitutes science. Thereafter, the article conducts a formal analysis of various schools of thought of science. Specifically, the article offers a comparison between historical relativism, scientific realism, logical empiricism, and logical positivism. Furthermore, in view of analysis, this article examines if marketing qualifies to be a science. Finally, the article attempts to offer a resolution to the ongoing debate on scientific status of marketing by proposing resource advantage theory as a general theory of marketing.

Is Marketing a Science: Debate Revisited

In recent years, many attempts have been given to discerning if marketing is a science, and additionally, if a general theory of marketing can be formulated comprising the current state of marketing thought. The efforts to form a general theory of marketing have been made through the use of subcomponent theory construction (Bartels 1968), as opposed to hierarchical theory construction as is preponderant in the natural sciences (Einstein 1938). Given below is the summary of comments of various prominent marketing researchers whether marketing is a science or not:

Researchers who agree that marketing is a science:	Researchers who do not agree that marketing is a science:
Converse (1945): Marketing is developing as a science	Alderson and Cox (1948) – Marketing cannot be considered a science until we reach a stage of continuous interaction between theory and research
Bartels (1951) - Marketing is almost a science; “science” is a generic name for a number of disciplines and marketing is a part of that science. Science is “knowing”; but narrowness, simplicity and variability in marketing theory impedes a formal scientific status	Hutchinson (1952) – Marketing does not conform to the attributes of science (no theory). It is more of an art/practice (like medicine, architecture, or engineering). It involves a series of unique problems and general solutions may be found which can be adapted to unique situations (can use scientific technique, but is not a true science)
Taylor (1965): Scientific progress can be speculative thinking, deductive reasoning, and empirical experimentation. Market can be considered a science to the extent that the marketer contributes to conceptual themes and extends theory.	Buzzell (1963) - Marketing lacks the central theories to be a science but we should still look for good theory and apply the scientific method. It is important to practitioners as well but prediction of individual responses may not be necessary for scientific marketing
Kotler (1972); Bagozzi (1984): Marketing can be considered to be a science	Dawson (1971) – Marketing is not a science but a pseudo-science. When marketers strive to become scientists, they become irrelevant to their constituents
Peter and Olson (1983): Marketing creates useful knowledge and can be considered scientific	O'Shaughnessy and Ryan (1979) – It could be damaging to promote marketing as a science (open to ridicule)... but it could become a science in the future. Marketing does not have any paradigms showing explanatory progress of discipline. Marketing is like a technology (seeks more

	effective solutions to practical problems), but technology and science are not same but may be interdependent
Arndt (1985): Marketing is science. But, marketing discipline can be further developed into more robust scientific discipline.	Carman (1980) - marketing is a technical art with foundation in social sciences
Holbrook and O'Shaughnessy (1988): Marketing can strengthen its status as science if marketing theory accepts (and engages) other disciplines and their particular starting points for analysis.	Zaltman (1982) – The positivist science in marketing is incomplete and ignoring the human/social dimension of knowing. Marketing theory should be augmented by “generative theory” (more open to challenging assumptions, generating ideas, and creating new alternatives)
Hunt (1991): The positive dimensions of marketing constitute a science. They meet the four requirements (see above section). “Central theory” requirement is overly restrictive	Anderson (1983) - “Science” is determined by society; scientific knowledge must be viewed as a sociological process; dynamic view of theory and scientific progress. Marketing does not satisfy these requirements
Bass (1993) - marketing has become a science (has understanding, laws, and is testable); search for generalized explanations and descriptions	Nevett (1991) - Relationships are non-constant - can't be reproduced; science needs precise vocabulary, marketers need more expressive language; marketers generalize to solve problems - scientists move toward general propositions
Zinkhan and Hirschheim (1992): Marketing is developing as a science. Marketing research is comprehensive methodological mix of other disciplines, should not endeavor for hegemony in explaining phenomena outside its domain.	Anderson (1994) - Marketing has developed a scientific infrastructure (e.g., organizations, publications, methods). Little progress in developing central theories (may not be possible to find theories that meet scientific standards). Even consumer behavior theories fail the prediction criterion. In marketing discipline research is more of the nature of technique- than a theory-driven exercise. Most research is fatally flawed and worthless. Pursuit of science has damaged marketing's credibility
	Sheth and Sisodia (1999): Marketing is still developing as scientific discipline. Formally, assigning marketing a scientific status may be premature

In pursuance of determining the scientific status of marketing, it is important to first determine what constitutes science. Past researchers have defined good science as science which is replicable, makes sense, and is able to predict and explain, has objective criteria, is relevant, has experimental control, expands knowledge and is accepted by society (Hunt, 1983). Many researchers have posited criteria for a discipline to be considered a science (e.g. Alderson, 1957, Buzzell, 1963, and Hunt, 1991). The common theme that echoes from the various criteria is that for a discipline

to be considered a science, first, it must be classified and systematized body of knowledge. Second, it must be organized around a central theory and number of auxiliary theories. Third, it should aim to discover uniformities and irregularities; which science seeks to discover, using scientific techniques.

Predicated on the preceding criteria marketing may be considered to be a science. However, it is still in a very nascent stage. Past researchers have argued that the lack of general theory of marketing is a major reason for not qualifying marketing as a science (e.g. Buzzell, 1963; O'Shaughnessy and Ryan, 1979; Alderson, 1994). Conversely, recent literature suggests that Resource Advantage Theory (RAT) (Hunt 1995; 1996; 2000a, 2000b, 2000c, 2000d; Hunt and Morgan 1996; Hunt and Arnett, 2003) can be considered to be the general theory. RAT is a general theory of competition that describes the process of competition in modern economy (Hunt and Morgan, 1996; Hunt and Arnett, 2003).

RAT is an interdisciplinary theory with roots in 11 different economic traditions but mainly draws from the Austrian and the Schumpeterian economics (Hunt, 1996, 1997a; Hunt and Lambe, 2000). This theory is representative of modern economy and includes several aspects of industry and economy, which were erstwhile left untouched. RAT has served as basis for explaining several industry phenomena (Hunt and Arnett, 2003) such as: 1) Why firms within a given industry are diverse (Hunt and Morgan, 1995; Hunt, 1997a) 2) Causes of difference in quality, inventiveness, and productivity between market-based and command economies (Hunt, 1995, 1997b; Hunt and Morgan, 1995, 1997d) 3) Dynamic nature of competition (Hunt and Morgan, 1995, 1997c; Hunt and Duhan, 2001) 4) The knowledge-discovery process of competition (Hunt, 2000c) 5) The nature of

competition, which is both efficiency and effectiveness seeking (Hunt and Duhan, 2001) 6) The growth and development patterns of national economies (Hunt, 1995).

RAT provides both prescriptive and descriptive utility to the marketing discipline. RAT takes a very realistic approach in providing insight to economists, industrialists and marketers (Hunt, 1997a; 1997b). It encompasses various aspects of relational exchanges, transaction costs, relationship marketing and shared knowledge, which influence competition and economics (Hunt and Arnett, 2003). Thus, RAT can be considered to be a general theory of marketing as it satisfies the both Hunt's (1991) and Bartels's (1967) criteria of what a general theory should be. Also, RAT meets Buzzell's (1963) criteria of qualities of a general theory as it can successfully elucidate and predict market occurrences (Hunt, 2002). Furthermore, the explicatory nature of RAT makes it eligible for being considered as a general theory of marketing (Hunt and Arnett, 1993). Other than a few occasional challenges (Deligonul and Cavusgil, 1997; Hodgson, 2000), resource advantage theory has been accepted as general theory of marketing (Hunt, 2001a, Hunt 2002). Hence, marketing may be considered a science, with RAT as its central theory. This central theory will guide the development of other auxiliary theories leading to further development marketing science.

The four major schools of thought that have guided large portion of modern day scientific inquiry are elucidated as below:

Historic relativism

Historical relativism holds that "Knowledge" or "Knowledge claims" can be comprehended relative to conceptual frameworks, theories, paradigms, or Weltanschauungen (World view). Historic relativism stems from Kant's revolutionary

critique of pure reason (Chalmers, 1999). Relativists propose that an experienced reality may exclude inductions to both theoretical constructs and universal empirical truths (Chalmers, 1999). Historical relativism is associated most commonly with Conceptual Framework Relativism. Historical Relativists rejected the idea that philosophy of science's main job was to clarify the language of science. Historical relativists believed that by analyzing the historical development of science one could develop theories to explain how scientists both discover and justify their knowledge claims. Furthermore, historical relativists claims that the development of scientific theories embraced one version or another of cognitive relativism.

Popper charges historical relativists with “helping to destroy the tradition of respecting the truth” (Popper, 1966, p308). Laudan (1990) posits historical relativists do not provide coherent justification for factual, methodological and axiological features of scientific change. Therefore, Lakatos (1978) recommends that Engagement in rational appraisal can be a way to avoid collapsing into historical relativism and not by following full-scale empirical history.

Scientific realism

Scientific realists maintain that the entities proposed by scientific inquiry are real entities in the world, and the properties that are attributed to them are approximated (emphasis is on approximation and not on exact measurement) by the best available scientific theories. Scientific realists posit that good scientific inquiry is largely theory-independent phenomena and such scientific inquiry can be conducted even when the relevant phenomenon is not observable (Lakatos, 1978). Thus, Scientific realism is the common sense (or common science) conception that states scientific methods are fallible and that most scientific knowledge is approximate.

Scientific realists discard the instrumentalism associated with rational positivism and the presupposition that all scientific knowledge takes the form of empirical regularities. Scientific realists postulate that scientific theory may be approximately true even when it may be inferentially unsuccessful. Critiques of scientific realism suggest that it is unable to elucidate the rapid progress that occurs in scientific knowledge during periods of revolution (Chalmers, 1999).

Logical positivism

Logical Positivism approach revolves around the idea of using “verificationism” to determine how meaningful statements are. A statement verified logically or by sense experience is considered to be meaningful. Thus, all metaphysical statements (like those concerning theology) are considered meaningless as they lack objectivity. Logical positivists believe that science is empirical and insist on rigorous measurement and hypothesis testing.

Logical positivists prefer inductive statistical methods of research. The fundamental doctrine of this model is the verification theory of meaning. According to verification model, any statement or proposition can only be meaningful if it can be empirically confirmed (Chalmers 1999). This criterion posed problems for the logical positivists due to lack of acceptance of such axioms as unconditional truths because of inability to verify it empirically. In later years, logical positivists renounced the verifiability basis and made some revisions to their theory to accommodate more tolerance for non-empirical findings

Logical empiricism

Logical positivists assume that the science is objective and emphasizes rigorous measurement and hypotheses testing. On the other hand relativism asserts

more subjective and creative aspect of science. Logical empiricists take a stance in middle of the two extremes. As per principles of of logical empiricism, scientific progress in any discipline starts with the untainted observation of reality. This is expected to provide the researcher with an image of the real world from which he/she cognitively generates an a priori model of the process to be investigated. Hypotheses are derived from the model and are subjected to empirical tests and if the data supports the hypotheses, then a confirming instance are recorded. Hypothesis that can withstand rigorous testing is said to be 'corroborated' (Popper, 1959, p33). Thus science develops through the accumulation of multiple affirming instances obtained under a wide variety of circumstances and conditions (Anderson 1983).

Logical empiricists believe that all ideas are stem from experience. Therefore, knowledge of the physical world is no more than a generalization of particular instances. The generalizations can never be hundred percent true and can at best reach a high degree of probability. Logical empiricists believe that knowledge development is an additive process that arises from consensual validation of empirical perceptions (Chalmers, 1999).

Historical Relativism	Scientific Realism	Logical Empiricism	Logical Positivism
Laudan, 1990; Peter, 1992	Lakatos, 1977, 1978	Hunt, 1983, 1991	Peter and Olson, 1983
Science creates realities	Human creative and imagination and not the facts of the universe determine direction of science.	True nature of reality can never be known with certainty. Science attempts to know the real world.	Science discovers the true nature of reality
Science is social process and cannot be understood without context.	The criticism of the theories is based on empirical evidence but the abandonment of a research program involves extra-experimental considerations.	The procedures that science uses to justify its knowledge claims should be independent of cultural, social, political and economic factors.	Science can be understood without considering cultural, social, political and economic factors
Science is subjective.	The demarcation of science from pseudo-science is objective in the world of ideas only.	Complete objectivity is not possible but science is more objective in justifying its knowledge claims.	Science is objective
Science is relative	Scientific knowledge is not absolute The progress is science is made by contribution of novel facts by alternatives.	Scientific knowledge is not absolute but is cumulative	Scientific knowledge is absolute and cumulative
Science creates ideas that are context independent	Whether is proposition is fact or proposition depends on methodological decisions with the context of the research program	Science tries to discover the real world and in an attempt to discover the regularities some discoveries are stated in universal form and others in probabilistic form.	Science is capable of discovering universal laws of world
Truth is subjective and cannot be inferred outside context.	Science progresses and increase verisimilitude	Absolute truth is unknowable	Science produces theories that come closer and closer to absolute truth
Science is rational to the degree that I seeks to improve individual and societal well being	If science aims at truth it must maintain consistency	Science is rational since it increase our understanding of the world	Science is rational since it follows formal rules of logic

There are many ways of doing science in different situations.	There are norms of doing good science in addition to Hunt; research programs must be evaluated by their heuristic power.	There are norms for doing good science such as testable measures, reliability, and validity and data	There are scientific rules for doing science validity
Scientists seek supportive and confirmatory evidence in order to market their theory.	Theories are scientific only if it provides novel facts upon empirical testing.	Theories are subjected to the empirical testing	Scientists subject theories to empirical tests
Nothing can be measured without changing it.	Experience is most impartial arbiter but importance of decisions in methodology should not be neglected	Absolute perfection in measurement is impossible	Measurement procedure does not influence what is measured
Data are created and interpreted by scientists in terms of variety of theories.	Empirical testing provides ultimate but never enough grounds to reject a theory. Theory can be rejected when a better arises.	The empirical testing process provides good grounds for accepting or rejecting knowledge claims	Data provides objective and independent benchmarks

Relativism views science as mechanism for constructing various views of reality. The proponents of relativism believe that science is relative and subjective. Hunt (1983; 1991) proposes that scientific inquiry with relativist perspective is self-refuting. Relativists believe that science is a social affair and cannot be understood without context. Hence, conducting an empirical investigation for theory building may be considered meaningless as the data is created and interpreted by scientist to lend veracity to their theoretical claims and not to test their theoretical claims. This will render the empirical research as meaningless exercise.

Considering the scientific realism perspective, marketing does not qualify to be science. For a science to be mature science, it should contain scientific programs, which not only offer novel facts but also offer novel auxiliary theories (Lakatos, 1978). Since marketing as a discipline has its share of “patched up, unimaginative series of pedestrian empirical adjustments” which have ...no unifying

idea, no heuristic power, no continuity” (Lakatos, 1978, p88), it may not be considered a science. Such scientific inquiry (in marketing domain) has been termed as an atheoretical exercise in fact gathering and data collection (Jacoby, 1978). Also, scientific generalization is rather elusive in marketing (Leone and Schultz, 1980). So, from scientific realism perspective marketing at best can be a science in a very embryonic stage.

From the positivist perspective, science produces theories that come closer and closer to absolute facts (Peter and Olson, 1983; Peter, 1992). However, this may not hold true for marketing discipline as marketing science is aimed at discovery and understanding of phenomena rather than development of absolute laws from occurrence of phenomena (Peter and Olson, 1983). Plausibly, strong emphasis on proving laws and theorems may not lead to greater development of marketing discipline. Too much emphasis on statistical significance without theoretical support will lead us “in a mass of meaningless and potentially misleading junk” (Jacoby, 1978, p87). Because theory development is very important element in scientific inquiry in marketing domain, logical positivism may not be appropriate philosophical perspective.

Logical empiricists believe that good science arises from scientists corroborating theories. The observation of phenomenon is followed by empirical testing. The empirical testing yield the probability of occurrence of phenomenon derived from a set of observations. The verisimilitudinousness of most marketing phenomenon renders logical empiricism as a suitable perspective for a scientific inquiry. Therefore, marketing would fall in middle of the continuum (somewhat to the right), provided in the preceding discussion.

The choice of a philosophical perspective must be predicated on some criteria. Any philosophical perspective must offer following to the discipline (Hunt 1991): 1) Encourage both theoretical and methodological pluralism, thus minimizing the possibility of conceptual myopia and biases in the choices of research methods. 2) Furnish standards of quality control for evaluating research programs and hopefully ensuring a steady advancement of marketing science. 3) Suggest methodological objectives that provide useful criteria for assessing present and potential research methods. 4) Provide a reconstruction of marketing science consistent with the contemporary structure of the discipline.

Following logical empiricism, Hunt (1991, p17-18) argued that the “major purpose of science is to develop laws and theories to explain, predict, understand, and control phenomena”. Science must have a distinct subject matter, a set of phenomena which serves as a focal point for investigation. The discovery of the underlying uniformities among these phenomena yields empirical regularities, law-like generalizations, laws, principles, and theories. Through this process, science aims to produce knowledge of the world by establishment of generalizations governing the world’s behavior (Chalmers, 1999).

Hunt (1983) perceives marketing as a behavioral science aspiring to explain exchange relationships between buyer and seller. Four fundamental explananda that can serve as the central tenets of marketing science (Hunt, 1983): 1) Buyers engage in behavior directed consummating exchanges 2) Sellers engage in behavior directed consummating exchanges 3) Institutional frameworks exist which are directed at consummating or facilitating the exchange 4) The consummating and facilitating of exchange between buyer, seller and institutional mechanisms affect society.

Hunt (1983) defines the set of guiding research questions associated with each of the central tenets: 1) Why do which consumers buy what they do, where when and how? 2) Why do; which sellers price; produce, promote and distribute the products the way they do, where, when and how? 3) Why do; which kinds of institutions develop to engage in kinds of functions or activities to consummate or facilitate exchanges, and when will these institutions develop, where and how? 4) Why do which kind of behavior of buyers, sellers and institutions have what kinds of consequences on society, when they do, where and how?

The preceding set of questions shall be effective in providing the researchers guide to examine relationships in marketing context. In addition, the well-grounded theory resulting from examining the above questions must meet the five classification criteria specified by Hunt (1991) namely: 1) Specification adequacy 2) Adequacy of characteristics used in classification 3) Mutual exclusiveness of categories 4) Collective exhaustiveness of categories and 5) Utility to the marketing community.

Logical empiricism is an epistemology which locates the foundation of knowledge in experience and the basis of science in experiment, induction and observation (Kuhn, 1962). Logical empiricists suggest that all knowledge begins with observation, leading to empirical generalizations among observable entities (Hunt, 1991). By adhering to logical empiricism, researchers can approach various marketing phenomena and search for empirical support for theoretical generalizations. Hunt (1990, 1991) suggests that empirical knowledge is fallible and a reasonably objective knowledge about the world can be obtained through observation. Although, it is assumed that knowledge is fallible but evidence is still required to support the

assertion that such interpretive knowledge increases understanding of the phenomenon and improves decision making (Hunt 1991).

In marketing discipline, many new hypotheses (also models positing relationships) can be generated simply by intuition, or by subjective processes of interpretation (Hunt, 1991). These models or parts of these models can be tested empirically. If model can withstand rigorous and iterative empirical testing, it is corroborated to become a theory (Popper, 1959). Once the status of a theory is attained, it can be used to develop other auxiliary theories and examine other phenomena. Such theory will face occasional challenges but will continue to remain a theory till the enormous evidence gathers against it. For instance, RAT has attained the status of a theory (Hunt and Arnett, 1993) but it is not free from challenges (See Deligonul and Cavusgil, 1997; Hodgson, 2000). But, the evidence against RAT is not enormous thus it continues to serve as a theory for explaining various marketing phenomena> However, when the evidence against is sufficient to result in paradigmatic shift, there will be emergence of a new theory (Kuhn, 1962).

In marketing domain knowledge emanates from observation (data) leading theory, which provides understanding to the observation (Hunt, 1991). In concurrence with Bagozzi (1984), science and knowledge typically would reveal in an upward manner: starting with data to theory to understanding. Therefore, following logical empiricism, scientific inquiry in marketing using experimentation, observation and induction may be most favorable for development of the discipline. In conclusion to the above discussion, logical empiricism philosophy, may guide the scientific inquiry in marketing domain (Hunt, 1983, 1991). Conceivably, logical empiricism may be the appropriate epistemological and methodological foundations for marketing research.

It must, however, be noted that although most researchers emphasize on logical empiricism as the guiding philosophy in marketing context; journals are replete with articles written more often from the perspective of confirming that the hypothesized models fit (Cliff, 1983). In other words, most researchers would seek to confirm rather than refute a theory. Furthermore, Cliff (1983) promulgates that “corollary that when the data do not disconfirm a model, there are many other models that are not disconfirmed either” (p117). Thus, scientific progress may progress with the existence of even a single alternative competing model. Hence, confirming the model fit should not guide the scientific inquiry. In concordance, Maccallum, Wegener, Uchino, and Fabrigar (1993) demonstrate that there could be umpteenth alternative models that would have yielded equivalent fit to the models published in prestigious journals.

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