



Contents lists available at ScienceDirect

## European Management Journal

journal homepage: [www.elsevier.com/locate/emj](http://www.elsevier.com/locate/emj)

# A scientific realism perspective on scientific progress in marketing: An analysis of theory testing in marketing's major journals

Thomas P. Kenworthy\*, John R. Sparks

Management and Marketing Department, University of Dayton, 300 College Park, Dayton, OH, 45469, USA

## ARTICLE INFO

### Article history:

Received 17 August 2015  
 Received in revised form  
 19 June 2016  
 Accepted 21 June 2016  
 Available online xxx

### Keywords:

Marketing  
 Theory testing  
 Theory borrowing  
 Scientific progress

## ABSTRACT

Marketing's scientific progress depends on, among other things, the development and testing of theories that explain and predict marketing phenomena. Ultimately, theory testing should advance the discipline toward broader theories with greater explanatory and predictive power. Using the inductive-realist model (Hunt, 2012) as a framework for scientific progress, this study analyzes three decades of theory testing published in five major marketing journals. The study examines issues of the amount of theory testing, the extent to which theories are tested multiple times, and the disciplinary origins of the theories that are tested. The results show that marketing has been remarkably productive in the development and testing of theories; however, that progress is tempered by the relatively few theories that are tested multiple times.

© 2016 Elsevier Ltd. All rights reserved.

## 1. Introduction

The inductive-realist view of scientific progress requires the development and testing of theories that explain and predict relevant phenomena. Therefore, for marketing to progress scientifically, scholars must develop and test theories that explain and predict phenomena associated with the discipline's core subject matter – exchange (Bagozzi, 1975; Hunt, 1991). Yadav (2010) argues that an important component of theory development is the broad and creative thinking that often characterizes the purely conceptual articles that appear periodically in marketing's major journals. He notes, however, that the number of such articles has declined significantly over the past 30 years. Yadav attributes the decline to several factors, including emphases in doctoral education, priorities in promotion and tenure evaluation, and editorial preferences at marketing journals. Together, these and other factors may direct effort away from the purely theoretical and toward the empirical. The net result of these factors could be a stifling of theoretical creativity, a focus on small ideas, and a continued reliance on disciplines such as economics and psychology as primary sources of new theoretical insights into marketing. Indeed, the discipline may

already be suffering the effects of these harmful trends.

If Yadav's (2010) conclusions about the decline of theoretical development in marketing are correct, they may suggest to some that the state of empirical scholarship in marketing is sound, if only overemphasized. It stands to reason that for a given amount of space in marketing's major journals a decline in the number of conceptual articles implies a corresponding rise in the number of empirical articles. As these journals “continue to thrive” (Yadav, 2010, p. 17), it could be that the emphasis on empirical research serves the discipline well. However, Yadav's (p. 17) conclusions are reached as part of an important admonition about restoring “the balance between different forms of research.” In this paper, we argue that this required balance extends beyond finding an appropriate proportion of empirical versus conceptual articles. It also includes achieving balance within the realm of empirical research and, in particular, the empirical testing of theories.

According to Yadav (2010), the vast majority of articles published in marketing journals contain both conceptual and empirical content, suggesting that empirical theory-testing articles do much of the “heavy lifting” of science in marketing. Amidst the periodic calls for greater theoretical and conceptual work cited by Yadav (i.e., Wind, 1979; Staelin, 2005; Webster, 2005), it is surprising how infrequently calls to take stock of long-term trends in theory-testing research occur, especially given its critical role in the science of marketing. Of particular importance to scientific advancement would be questions about the number of theories proposed and tested in articles published by marketing's major journals, the

\* Corresponding author. Now at: Strategy, Entrepreneurship and International Business Department, Odette School of Business, The University of Windsor, Windsor, Ontario N9B 3P4, Canada.

E-mail address: [tpk@uwindsor.ca](mailto:tpk@uwindsor.ca) (T.P. Kenworthy).

amount of testing any single theory receives, and the disciplinary origins of these theories. The purpose of this paper is to conduct such an assessment.

An assessment of this sort would offer needed insights into the state of marketing's progress as a science. If only a few theories are being proposed and tested by marketing scholars, this may indicate a lack of adequate scientific progress. On the other hand, a proliferation of theories may also be a cause for concern, particularly if those theories are what Merton (1949, p. 448) described as "the minor but necessary working hypotheses that evolve in abundance during day to day research." Extensive theory borrowing may also suggest inadequate scientific progress by hindering endogenous theory development and may potentially raise doubts about a discipline's claims of scientific status (Oswick, Fleming, & Hanlon, 2011; Whetten, Felin & King, 2009). While precise indicants of what constitutes adequate progress for the science of marketing may not be easily developed, examination of the issues raised in this paper may provide a rough sense of whether the "balance" Yadav (2010) called for is being struck in the realm of theory testing.

In the sections that follow, we conduct an analysis of empirical theory-testing research published in the same five journals and across the same time period as Yadav's (2010) study of purely conceptual articles. We begin by framing our work within the larger context of the varying perspectives of reality that guide scientific inquiry and then describe the philosophy that guides this study – scientific realism. Using the inductive-realist model (Hunt, 2012) as a framework, we review and adopt a definition of theory and then apply it to a concept referred to here as "explicit tests of theory." We then consider the importance of explicit tests of theory to scientific progress and knowledge development in marketing. Next, we describe an analysis of published explicit tests of theory covering three decades in marketing's major journals. Finally, we discuss the implications of the results.

## 2. Reality, pluralism, and scientific progress

Given the variety of opinions on what constitutes science itself, much less scientific progress, any paper attempting to gauge that progress will be necessarily controversial. As indicated by this paper's title and introduction, our views are decidedly realist. However, we believe it important to acknowledge the diversity of perspectives about the nature of science and scientific progress, in particular by recognizing differences between the realist views that guide our analysis and non-realist views of science advocated by some researchers in marketing (Peters, Pressey, Vanharanta, & Johnston, 2013; Tadjewski, 2011) and management (Mir & Watson, 2001).

### 2.1. Views on the nature of reality

A comprehensive review of the non-realist perspectives on science and scientific progress is beyond the scope of this paper, especially given the rich variations in their ontologies and epistemologies. Indeed, Löbler (2011, p. 53) categorizes much realist and non-realist thought into what he refers to as "streams of isms." In these streams flow positivism, empiricism, interpretivism, constructivism, structuralism, relativism, postmodernism, post-structuralism, realism, social constructivism, and so forth. Löbler's treatment of these isms is particularly useful in that it points out the major commonalities in the isms rather than focusing solely on the sometimes narrow differences that separate them.

The four streams identified by Löbler (2011) center primarily on differing views about the nature of reality and whether researchers can objectively evaluate that reality. Of the four streams of thought, only the first, which Löbler calls the "object-oriented/objective

stream," sees reality as knowable, albeit imperfectly. According to Löbler, realism and other "positivist" philosophies occupy this stream. In the object-oriented/objective stream, researchers investigate the objects of their research and attempt to uncover characteristics of these objects that will ultimately yield regularities, lawlike generalizations, and scientific laws (Hunt, 1991). Science in the object-oriented/objective stream progresses as knowledge about the nature of objects grows through the development and testing of theories and then the independent replication of those tests.

The remaining three streams view reality and science in quite different terms than the first. Löbler (2011) calls his second stream of isms the "subject-oriented/subjective stream," which includes constructivism and interpretivism. In this stream, the focus of research is not objects of investigation but rather the subjective and socially determined experiences of the researchers themselves, for it is these experiences that determine how researchers conceptualize the objects of their research. Indeed, as Löbler (p. 57, italics in original) suggests, because objects are socially experienced, the realities of the objects are unique to individual researchers who actually construct the realities themselves: "[S]ubjects are *unable to get the same picture of an object or any entity; they do not even know whether they are investigating the same object.*" The third stream, the "intersubjective orientation," is related to the subject-oriented/subjective stream through the view that the reality of objects is constructed socially. However, the focus of the intersubjective orientation is not on a researcher's individual construction of reality but on the "co-construction" of reality through social relationships and interactions. The fourth stream is called the "sign/signifier" orientation, which encompasses primarily post-modern philosophies. Under this view, objects of research are actually only "signs" that are disconnected from the objects themselves. The disconnection applies not only to the objects of research but also to all inputs and products of research. Researchers are not researchers but signs that signify researchers, for example.

We emphasize that the notion of socially constructed reality, whether by individual or by groups, extends beyond the simple idea that individuals merely perceive the same phenomenon differently. As Hunt (1991, 316) points out, this perspective "would mean that the perceptions of some of the people could be 'right' and others could be 'wrong.'" To the extent that reality itself is socially constructed, either by individual researchers or by groups of researchers, they cannot draw objectively the right conclusions about reality, nor can their conclusions be deemed objectively wrong.

### 2.2. Plurality in scientific progress

In the world of socially constructed reality where knowledge claims cannot be objectively evaluated, scientific pluralism naturally follows. To the extent that knowledge is theory driven and to the extent that researchers are inseparable from the phenomena they investigate, we believe that a tenet of non-realist philosophies should include openness to many views of science and scientific progress. Indeed, Chia (2014, p. 688; see also Hernes, 2014) commends European academe in particular for its "more readily found scholarly openness to the plurality of perspectives that can be proffered on any observed social phenomenon."

The notion of pluralism raises two important points about the research in this paper. First, those who advance the idea that reality is socially constructed cannot assert that the scientific knowledge claims of realist researchers are objectively wrong. While scholars of this view may argue that realism itself is too narrow a philosophical perspective, they cannot argue the rightness or wrongness of realist research itself. The socially constructed nature of reality

would make realist science just one way of knowing among many. Second, the pluralism that naturally follows a socially constructed view of science would be open to the science of realism even if the reverse were not true. As a rule, realists reject the idea that reality itself cannot be reasonably discerned through adherence to proper research protocols. Moreover, realists argue that differences in the perception of reality do not constitute constructions of different realities.

Even if realists view pluralism in science with some skepticism, many with non-realist views do not. Indeed, according to Mir and Watson (2001, p. 944), constructivism and presumably other non-realist philosophies do not necessarily preclude researchers from employing many of the same research methods as researchers from the realist tradition. If so, then the analysis and conclusions presented in this paper should be of interest to marketing and management scholars from all perspectives, who employ empirical testing of statistical hypotheses in their research.

### 3. Scientific realism, theory testing, and the inductive-realist model

In the analysis that follows, we rely on scientific realism and the inductive-realist model proposed by Hunt (2012). The inductive-realist model takes its perspective from scientific realism, a philosophical view that scholars such as Hunt (1990, 1991) and Bagozzi (1984) believe is the most appropriate philosophy of science for marketing research, and that Hunt (2012) argues is already being practiced by the majority of marketing scholars. Hunt (2012, p. 5) summarizes the major tenets of scientific realism:

- the world exists independently of it being perceived (classical realism);
- the job of science is to develop genuine knowledge about the world, even though such knowledge will never be known with certainty (fallibilistic realism);
- all knowledge claims must be critically evaluated and tested to determine the extent to which they do, or do not, truly represent, correspond, or accord with the world (critical realism); and
- the long-term success of any scientific theory provides reason to believe that something, such as the entities and structures postulated by that theory, actually exists (inductive realism).

Scientific progress, and the part in it played by theory testing, is illustrated by the inductive-realist model of theory status (Hunt, 2012). The model, which is shown in Fig. 1, explains how some theories progress toward success while others meet with failure.

The heart of the inductive-realist model lies in the four major model components labeled 1 through 4 in Fig. 1. These components correspond to the four tenets of scientific realism given by Hunt (2012), quoted above. The external world (component 4), which exists independently of our perceptions of it, contains entities with attributes and relationships to other entities and their attributes. Proposed theories (component 1) purport to explain and predict these entities, attributes, and relationships. Component 2 represents a theory's standing in a scientific community and ranges from rejection to acceptance. "Working acceptance" lies between acceptance and rejection. A theory's scientific standing affects the extent and nature of empirical testing a theory receives. The testing itself is represented by component 3, "theory uses." Hunt (2012, p. 12) describes how theory status affects theory uses:

First, *accepted* theories are used to explain past and present phenomena in the theories' domains, to predict future

phenomena in the theories' domains (to further explore, to "flesh out," their boundaries and characteristics), and to guide future interventions in the world of [Component] 4. Second, theories with the status of *working* acceptance are used by their advocates, detractors, and theory-neutral investigators "as a good basis for further research" (McMullin, 1984, p.35). Such research may consist of theoretical or empirical explorations to determine whether and under what circumstances such theories might be accepted. Third, *rejected* theories are not used by most scientists working in a theory's domain, except when additional evidence surfaces.

Science progresses as researchers within scientific communities work toward decisions on the status of proposed theories. In this regard, the inductive-realist model raises several important points. First, the model stresses that theory development and theory testing are both required for scientific progress under the realist conception. Empirical testing for its own sake does not advance the understanding of phenomena. Similarly, theories that are not subjected to rigorous testing cannot reasonably claim authority in their explanatory power. Second, decisions about a theory's status generally require that the theory be tested multiple times. If so, scientific progress must include the replication and extension of theory tests (Easley, Madden, & Gray, 2013; Hunter, 2001; Tsang & Kwan, 1999). Third, the notion of scientific progress implies that science progresses toward some end. While the goal of science is fundamentally the explanation and prediction of phenomena, in practical terms progress implies advancement toward broader, more inclusive, more general theories that explain and predict a wider range of phenomena. This is not to suggest that a "general theory of marketing" ought to be the goal of marketing scholarship, although several prominent marketing scholars have proposed such theories (e.g., Alderson, 1965; Bartels, 1968). Indeed, arguing that grand general theories may be too far removed from the phenomena they purport to explain and predict, sociologist Robert Merton (1949) proposed that "theories of the middle range" held the greatest promise for scientific advancement. Whether grand and all-encompassing or of the middle range, scientific progress ultimately requires that limited and narrow theoretical developments eventually "be incorporated into more general structures" (Hunt, 2011, p. 485).

#### 3.1. The scientific realist meaning of theory

To the extent that the proposal, testing, and eventual acceptance or rejection of scientific theories are necessary for scientific progress, the realist view of "scientific theory" requires some clarification. In his influential works on marketing theory, Hunt (1976, 1991) describes what has come to be the "conventional view" of theory in the discipline. This view is articulated in the three dichotomies model (Hunt, 1976; Arndt, 1981), which describes marketing theories as falling into one of the eight categories based on their aggregation into micro versus macro issues, applying to for-profit versus not-for-profit organizations, and being positive versus normative in nature. According to Hunt, marketing theories that are classified as positive in nature qualify as scientific theories because they attempt to predict and explain phenomena, which is the role of theory in science. Hunt (1991, p. 148–149) reviews several definitions of theory from noted philosophers of science such as Kaplan (1964), Bunge (1967), and Popper (1959) before offering a "consensus definition" of positive theory from Rudner (1966), who defines it as a "systematically related set of statements including some lawlike generalizations, that is empirically testable." We briefly discuss each of the criteria listed in Rudner's

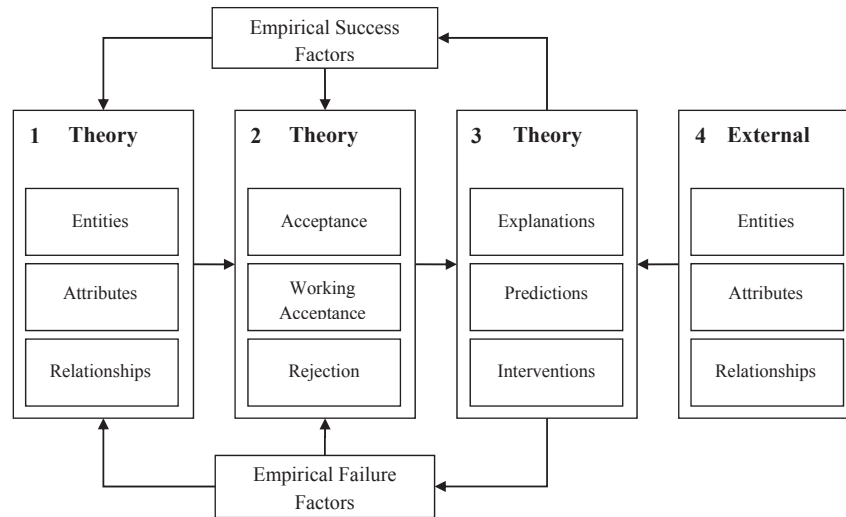


Fig. 1. The inductive-realist model. Adapted from Hunt (2012).

definition.

The first criterion that theories contain “systematically related” statements offers some latitude for interpretation. At one extreme, theoretical statements could be essentially unrelated; that is, they could simply be a set of propositions. At the other extreme is a fully formalized theory, which Hunt (1991, p. 152) describes as a “complete, rigorous articulation of the entire syntactic and semantic structure of the theory.” Presumably, systematically related sets of statements whose systemization falls somewhere between unrelated sets of propositions and fully formalized theories could still qualify as theories by Rudner’s (1966) consensus definition. Importantly, Rudner’s definition does not imply a requisite scope or breadth of idea to qualify as theory. In other words, his definition accommodates narrow and limited conceptualizations as long as they contain at least some statements that work together to communicate an idea larger than the statements themselves.

The second criterion in Rudner’s (1966) definition of theory is that theories should contain some lawlike generalizations. Hunt (1991) notes that lawlike statements make possible the prediction of marketing phenomena and offers criteria for statements to be considered lawlike. First, the statements must be in the form of a generalized conditional. That is, they must specify an “if–then” relationship; if X occurs, then Y will also occur. Second, lawlike generalizations must have empirical content, which is required for testing the statements. Third, lawlike generalizations must exhibit “nomic necessity.” Nomic necessity prevents lawlike generalizations from describing relationships that occur purely by chance. True lawlike statements imply that the presence of one phenomenon associates systematically with some other phenomenon. Fourth, lawlike generalizations must be integrated into some larger body of scientific knowledge. In other words, simple empirical regularities do not qualify as lawlike generalizations.

The third criterion specified in Rudner’s (1966) definition of theory is that theories must be empirically testable. This criterion extends beyond simply having empirical content. To be empirically testable requires that theories can be tested for their ability to explain and predict real-world phenomena. Simply put, empirical testability provides the means for evaluating the degree to which a theory is actually true (Hunt, 1991). Empirical content itself is simply the presence of real-world referents in a theory. Empirical testability suggests that the content can be systematically associated or compared. In the study reported in this paper, we utilize these criteria to classify articles as either explicitly testing theory or

not testing theory in order to provide some insight into whether efforts at scientific progress have been successful. By successful, we do not mean that a theory is empirically supported – only that it is explicitly tested.

### 3.2. Explicit theory testing and scientific progress

To evaluate theory testing in the marketing discipline, we utilize the term “explicit theory testing,” which is not at all related to the psychological concept of implicit theory. (That concept refers to the informal views of the world that individuals use to guide perceptions and decision making.) In our case, the descriptor “explicit” applies to the word “testing” and not to “theory.” In other words, this investigation centers on explicit testing of theories in the marketing discipline. Our focus on explicit theory testing serves two purposes for this study. First, it speaks to the clarity of author intent. It is certainly possible that empirical research may evaluate theoretically plausible constructs and relationships without an author explicitly intending to do so. However, by limiting our analysis to clearly and intentionally articulated tests of theory, we avoid imposing our judgment over the expressed intent of the study author or authors and the editorial processes that approved the studies for publication. Second, focusing on explicit tests of theory aids in the operationalization of the criteria by which we classify studies. Those criteria are given in the next section.

Based on the classification criteria, this study identifies published papers that explicitly empirically test theories either developed in marketing or borrowed from other disciplines and adapted to marketing contexts. In so doing, the research reported here accomplishes at least three goals pertaining to evaluating scientific progress in marketing research. First, it provides an empirically based estimate of theory testing published in marketing’s major journals over time. Second, it assesses the degree to which marketing scholars test theory endogenous to marketing. Third, it identifies the theories that are most frequently empirically tested in marketing. Collectively, the research provides a snapshot on how theory testing in marketing aids in the progress of the science of marketing.

Such examinations of theory testing have been conducted in several other disciplines. In organization and management theory, Oswick et al. (2011) discovered that almost two-thirds of disciplinary research was driven by theories from a variety of disciplines: sociology, psychology, economics, biology, education,

engineering, history, law, linguistics, mathematics, philosophy, and politics. In strategic management, Kenworthy and Verbeke (2015) examined 5317 articles published in seven top-ranked journals from 1980 to 2010. They discovered that 63% of theories tested were from other disciplines such as economics, psychology, sociology, biology, marketing, and communication. In retailing, Brown and Dant (2009, p. 113) found 119 different theories used in 173 empirical articles published in the *Journal of Retailing* from 2004 to 2009. In purchasing and supply chain management, Chicksand, Watson, Walker, Radnor, and Johnston (2012) examined 1113 articles published in three leading journals during a 16-year span. They found that approximately one-third of empirical articles that tested theory and almost half of the theories were not domestic.

In marketing, as noted earlier, Yadav (2010) evaluates the state of purely conceptual articles in marketing's major journals. More narrowly, MacInnis (2004) documents the decline of conceptual articles within consumer research. While both studies make strong cases for the importance of purely conceptual research, neither article was directed toward evaluating the testing of marketing theories (see also Stewart & Zinkhan, 2006). Brown and Dant (2009) extensively trace the production and testing of retailing theory in articles published by the *Journal of Retailing*. In terms of content, these authors note the broad range of theories presented and tested in that journal, with most appearing only once.

#### 4. Material and methods

##### 4.1. Scope of the analysis

Conducting this analysis required that we make two initial decisions regarding its scope. In making both of these decisions, we were guided by Yadav's (2010) article on conceptual articles in marketing. First, we selected a time period that would be sufficiently long to show the presence of trends while containing the period to manageable levels. Following Yadav (2010), we opted for the 30-year time period beginning in 1980 and ending in 2010. The second decision was to limit the number of marketing journals to be included. Again, using Yadav (2010), we included the five journals from his analysis: *Journal of Marketing*, *Journal of Marketing Research*, *Journal of Consumer Research*, *Journal of the Academy of Marketing Science*, and *Marketing Science*. We note that *Marketing Science* does not cover the entire period of the study because the journal began publication in 1982, two years beyond the start of our analysis period.

##### 4.2. Classification criteria and procedure

We obtained electronic copies of all the available articles in the five study journals covered by the analysis. Our first task was to create a universe of empirical research studies that could be classified. While this seemed relatively straightforward, we found the task was complicated by questions about articles such as editorials, reviews, comments, replies, and research notes. Rather than making arguable judgment calls about potentially hundreds of articles, we opted for simple and inclusive decision rules: comments or letters from editors and regularly appearing features such as book reviews or legal developments were excluded. All other articles were included. We then developed criteria for classification as explicit tests of theory based on Rudner's (1966) definition as detailed in Hunt (1991) and discussed earlier. Our goal was to operationalize the definition into a set of criteria that are straightforward and easily applied and with as little inference and opinion as possible.

To accommodate this study's examination of theory testing rather than theory development, the first classification criterion

requires that articles report empirical results rather than be purely conceptual. The empirical content and empirically testable elements of Rudner's (1966) definition of theory suggest scientific tests of theory must be empirical. This criterion is also consistent with Hunt's (2012) inductive-realist model, which shows science progressing when it predicts and explains phenomena in the external world. Therefore, for purposes of this analysis, we define empirical as containing data collected on the basis of observation or experience and not strictly from theory. This simplifying criterion excludes purely simulation studies, where data are created by logical or theoretical assumptions.

The second criterion requires that studies communicate predictive hypotheses as generalized conditionals prior to their "methods" sections. The requirement that hypotheses be in the form of generalized conditionals partially addresses Rudner's law-like generalization stipulation. The presence of "methods" sections ensures that the hypotheses are tested empirically, which relate to their empirical content and nomic necessity. That the hypotheses be communicated prior to the "methods" sections helps ensure that the hypotheses are based on theory. In most instances, evaluating articles for this criterion was straightforward, as hypotheses are frequently labeled H1, H2, and so on. However, in some instances, hypotheses are not visually separate from the surrounding discussions but instead embedded in them. These were counted as testing hypotheses if the surrounding discussion referred to hypotheses or predictions. We did not classify studies as explicit tests of theory if the study simply presented and tested research questions and did not make clear predictions.

Third, to be counted as explicit tests of theory, hypotheses had to be derived from explicitly communicated or identified theories. In the cases of new theories or theories whose origins were not identified, we looked for hypotheses to be part of a broader model or we looked for hypotheses to be connected to a common set of related constructs. These requirements address Rudner's (1966) "systematically related" criterion. Classification of virtually all such studies was relatively unambiguous. Tests of extant theories were identified in the studies themselves by either names or citations. Importantly, in tests of extant theories, we made no attempts to determine whether the hypotheses were truly derived from the cited theories. Similarly, in cases where no extant theories were cited, we did not evaluate whether supporting theories should have been cited. In all the cases, we assumed that such qualitative concerns were addressed during the review processes. Finally, we did not ascertain whether hypotheses were supported by the data.

Among the studies classified as explicit tests of theory, we also classified theories as endogenous to marketing or, if not, identifying their home disciplines. Such designations can be difficult to make because, arguably, virtually all theory in marketing will overlap with social sciences such as economics or psychology. Thus, we adopt the term "home discipline" rather than "original discipline." To make the classifications, we relied on the authors' designations and citations. When marketing scholars cited theories as the bases for their empirical tests, we classified the theories according to the home disciplines of the journals or books cited as the sources of the theories. In the few instances when citations did not clearly identify a theory's home discipline, we used the departmental affiliations of the theory's author or authors. Although admittedly imprecise, we felt that these classifications could provide some insights into the origins and depths of theory testing in marketing.

Because this study is purely descriptive, makes no predictions, and tests no hypotheses, we did not rely on blind coders to conduct the analysis. The two authors worked independently to classify all of the articles and met afterward to resolve any differences. After independently applying the criteria to the journal studies, the results of the two classifications were compared first for classification

as explicit test of theory or not. Agreement between the two sets of classifications was 90%. After resolving the differences and deciding on a final set of articles, a second classification was made to identify the home discipline of the tested theory. This classification produced a 77% level of agreement. Several reasons likely contributed to the lower level of agreement for this classification. First, the number of disciplines available for classification increased the odds of disagreement. Second, there were some instances when home disciplines of theories were not easily identified. However, in all the instances, discussion produced agreement.

To check at least informally the accuracy of our classifications, we compared the percentages of empirical articles in the five journals used by [Yadav \(2010\)](#) in his analysis of conceptual articles with the counts for the same articles in our data. Assuming that articles were classified similarly, we reasoned that the complement of purely conceptual articles counted by Yadav would roughly approximate the percentage of empirical articles identified in our data. The comparison showed that this was the case. For four of the five journals, the complements of the number of conceptual articles in Yadav's study were within 10% of the percentage of empirical articles we counted. The exception was the *Journal of Marketing Research*, where the difference was 16%. These differences may be accounted for by articles where data were simulated or where mathematical models were developed but perhaps did not count as purely conceptual articles according to Yadav's criteria. Overall, we felt that the results of this informal check show reasonable consistency between the two studies, suggesting some accuracy in at least part of our classification.

## 5. Results

As shown in [Table 1](#), during the 31-year period from 1980 through 2010, the five marketing journals included in this analysis published a total of 5759 articles. Of these, 4435 are empirical studies, with, according to the criteria given in the preceding section, 1065 of these being explicit tests of theory.

As a proportion, 18% of the total articles published in the five journals are explicit tests of theory. In addition, the data presented in [Fig. 2](#) are informative, which show the percentage of explicit tests of theory in the five journals over the years covered in our study. Beginning in the 1990s, the proportion rises to a peak of about 40% and then declines to average about 25% thereafter. The figure shows graphically the shift toward the explicit testing of theory in marketing's major journals.

Turning to the theories themselves, our analysis counted a total of 979 separate theories explicitly tested in the five journals over 31 years. Of a total of 1065 articles that explicitly test theory, the vast majority (92%) of theories were tested only once. We offer some words of caution about this result. First, it could be the case that some constructs and relationships tested in many of the theories partially overlap with the same variables and relationships tested in other theories. Second, it is possible that some explicitly tested theories subsume or are subsumed by other explicitly tested

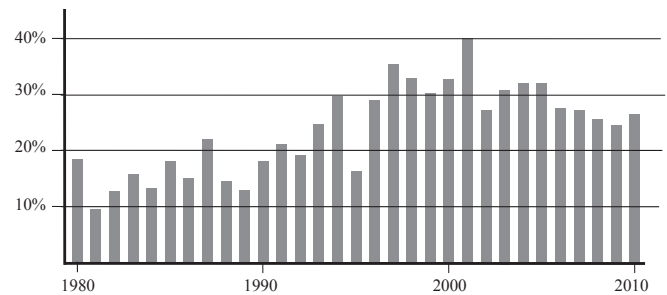


Fig. 2. Percentages of articles with explicit tests of theory from 1980 to 2010.

theories but are not clearly identified as such. Third, it could be that conceptually similar theoretical constructs could be tested under different names. For example, constructs with names such as attitude, evaluation, and judgment may capture essentially the same cognitive phenomenon but appear under different names in different theories in different journals. Regarding these possibilities, peer reviews are intended to filter such an overlap; however, review processes are far from perfect and our count may inflate the number of truly unique theories. Finally, not all readers may agree with our selection criteria or even our selections under those criteria.

That said, even by conservative estimates, the number of theories tested in the selected journals seems remarkable. Even supposing that our count doubled the actual number of truly unique theories explicitly tested in these journals, it would still mean hundreds of separate theories were tested during the study period. Certainly, the conceptual domain of marketing has grown since [Kotler and Levy \(1969\)](#) suggested broadening the concept of marketing and since [Hunt \(1976\)](#) argued for marketing's designation as a science. The variety of topics and the application of the scientific method to investigate them have invited more theory development and testing. It follows that as scholars seek to contribute new ideas to the discipline's body of knowledge, particularly in its leading journals, novel and untested theories would be developed, tested, and published.

As for theories tested multiple times, [Table 2](#) gives the names of the 65 theories we identified as having been explicitly tested more than once in the five journals. In the cases where the tested theory was not specifically named by the authors, we provide a name consistent with the study's content. Of these 70 theories, 36 were tested twice, 19 were tested three times, and five theories were tested four times. Ten theories were explicitly tested five or more times in the five journals included in our analysis.

Marketing's "top 10" explicitly tested theories along with the frequency of their appearances are shown in [Table 3](#).

Seven of the top 10 theories originate from within the field of psychology: regulatory focus theory, theory of reasoned action, construal level theory, elaboration likelihood theory, accessibility–diagnosticity framework, attribution theory, and social exchange theory. These seven theories account for 54 instances of

**Table 1**  
Empirical article counts by journal.

Journal	Total articles	Total empirical articles	Total explicit tests of theory	Percentage of theory-testing articles
Journal of Marketing	1111	777	312	40.2
Journal of Marketing Research	1357	1102	230	20.9
Journal of Consumer Research	1432	1288	227	17.6
Journal of Academy of Marketing Science	1033	769	272	35.4
Marketing Science	826	499	24	4.8
Total All Journals	5759	4435	1065	

**Table 2**  
Theories explicitly tested more than once.<sup>a</sup>

accessibility–diagnosticity framework	loyalty responses for high-involvement, high-service-content product markets model
affect-as-information theory	market power theory
agency theory	market-based assets theory
assimilation and contrast theory	new product announcement signaling paradigm
associative network theory	optimal stimulation level framework
attitude theory	persuasive-arguments theory
attribution theory	power dependence theory
attribution theory of motivation	product life cycle theory of trade
bargaining solution theory	prospect theory
bilateral deterrence theory	protection motivation theory
career stages theory	range theory
cognitive response theory	reference-dependent theory
commitment–trust theory	regulatory fit theory
construal level theory	regulatory focus theory
correspondence theory	relational exchange theory
cross cultural buyer–seller negotiations model	resource based view
diffusion of innovation theory	resource exchange theory
economics of information theory	resource-matching theory
elaboration likelihood theory	return on marketing model
encoding variability theory	role theory
escalation of commitment theory	sales call anxiety model
expectancy theory of motivation	salesperson motivation and performance model
family structure, materialism, and compulsive consumption model	schema-congruity theory
general theory of marketing ethics	self-perception theory
goal setting theory	signaling theory
heuristic-systematic model	social comparison theory
information integration theory	social exchange theory
information processing theory	social network theory
inoculation theory	s-o-r paradigm
institutional theory	theory of attitude toward the ad formation
integrated information response model	theory of reasoned action
job anxiety leads to dissatisfaction model	transaction cost economics
	two-factor theory

<sup>a</sup> Original theory names used where identifiable. In cases where no theory name was provided in the article, the authors provide one based on study content.

explicit theory testing and approximately 65% of the explicit theory testing of the top 10 theories. That seven of the 10 most frequently tested theories originate in psychology is not altogether surprising given the prevalence of consumer research as a subdiscipline within marketing and the continued development of the field of consumer psychology. Economics provides two theories that are among the 10 most tested in our set of leading marketing journals. The two theories, transaction cost economics and signaling theory, account for 22 instances of explicit theory testing, which is about 27% of the total tests among the top 10 theories. Overall, transaction cost economics is the second most frequently tested theory after only regulatory focus theory. The final theory in the top 10, the resource-based view, originates in strategic management and accounts for about 8% of the explicit theory testing among the top 10.

In the top 20 theories, only one originated in marketing: [Morgan and Hunt's \(1994\)](#) commitment-trust theory. This theory is

explicitly tested three times in the five journals. Of the 70 theories explicitly tested more than one time (see [Table 2](#)), 17 originated in marketing. While this figure may suggest that marketing has been less than successful in its efforts to produce and test scientific theories, readers should bear in mind that this portion of the analysis includes only theories tested more than once. When considering the origins of all explicitly tested theories, marketing appears to be quite productive in its scientific endeavors (see [Table 4](#)). Of the explicitly tested theories studied here, 791 are endogenous to marketing with psychology next with 109 theories, about 10% of the total.

**Table 3**  
Ten most frequently used theories.

Theory	Frequency of use
Regulatory focus theory	15
Transaction cost economics	12
Theory of reasoned action	8
Signaling theory	7
Construal level theory	7
Elaboration likelihood theory	7
Resource-based view	6
Accessibility–diagnosticity framework	6
Attribution theory	5
Social exchange theory	4
Self-perception theory	4
Two-factor theory	4
Agency theory	4

**Table 4**  
Home disciplines of explicitly tested theories.<sup>a</sup>

Field	Total theories	% of total
Marketing	791	80.71%
Psychology	109	11.12%
Economics	25	2.55%
Sociology	15	1.53%
Management	14	1.43%
Communication	5	0.51%
Linguistics	4	0.41%
Operations management	3	0.31%
Strategy	3	0.31%
Political science	2	0.20%
Applied mathematics	1	0.10%
Biology	1	0.10%
Engineering/optometry	1	0.10%
Entrepreneurship	1	0.10%
Law	1	0.10%
Philosophy	1	0.10%
Physiology	1	0.10%
Scientometrics	1	0.10%

<sup>a</sup> Based on home discipline of journals or books cited in articles.

## 6. Discussion and conclusions

As detailed earlier in this paper, the differing views about the nature of reality, knowledge, and science make conclusions about the progress of science controversial. Therefore, the conclusions drawn from this study must be expressed within a larger context. We discuss two here. First, our study views scientific progress strictly through the lens of scientific realism. While we believe that this is the most appropriate lens through which to view research in marketing, we acknowledge the sharp disagreement our views undoubtedly will evoke. Non-realist perspectives such as constructivism, for example, would contend that any scientific progress described here would exist only within the socially constructed realities of the researchers or communities of researchers whose realities are in concordance with ours (Mir & Watson, 2001; Peters et al., 2013). Given the existence of these varying perspectives, we emphasize the realist perspectives guiding this study and the conclusions drawn from it. That said, the belief that reality is socially constructed necessarily accompanies its corollary that science itself consists of alternative ways of knowing, which in turn invites a pluralistic view of scientific progress (Chia, 2014). Thus, to the scientific pluralist, the realist views reflected in our paper are not “wrong” per se, but simply encompass one valid perspective of scientific progress among many. It is our hope that our conclusions about scientific progress and explicit theory testing in marketing will add to the ongoing dialogue about science, reality, and pluralism.

Second, while we obviously believe that our selection of leading marketing journals is defensible on both philosophical and pragmatic grounds, we must acknowledge that scientific progress in marketing extends well beyond their pages. Indeed, the appearance of an article in any journal at any level of prestige does not necessarily confer on the article the quality of “good science.” Despite our collective best efforts, journal review processes can be both stochastic and myopic. The net result is to limit the scope and impact of marketing scholarship. Indeed, calling the situation sometimes “sorrowful,” Hunt (1994, p. 15) observes:

[M]arketing reviewers react quite negatively when a manuscript offers a genuinely original contribution to knowledge. Criticisms such as “where is the precedent?” and “where is the authority?” are, in my experience, disproportionately prominent in reviews by marketing referees. Indeed, marketing authors have been known to cite nonmarketing researchers for authority (using locations such as “drawn from ...”) even when, strictly speaking, the marketing author has made an original nonmarketing contribution. Marketers making genuinely original contributions to knowledge do so at their peril.

To the extent that Hunt’s observations are correct, they may well be particularly applicable to the journals included in this study. While these journals purport to advance the leading theoretical and empirical advancements in marketing science, their prestige in marketing academe may lead some reviewers to see their roles as gatekeepers to marketing canon. Even if journal review processes skew scientific progress, the research published in the journals included in our study – and others – cannot simply be dismissed as nonscientific. Progress may be irregular, slow, narrow, and incremental; however, these perhaps avoidable characteristics do not alone suggest that the science of marketing does not progress.

According to the inductive-realist model (Hunt, 2012), science progresses as theories are proposed, tested, and then either accepted or rejected by the scientific community on the basis of their abilities to explain and predict phenomena in the external world. Importantly, gaining acceptance begins with what Hunt

refers to as “working acceptance,” where scientists continue to test and revise theories that have not been disproven in a process that gradually produces theories with greater predictive and explanatory power. Successful theories eventually gain wider acceptance by the scientific community. Implicit in the inductive-realist model is the notion that, as theories withstand rigorous empirical testing and grow in acceptance, they may be incorporated into more general theories that explain and predict a broader array of phenomena.

Within the larger context in which marketing research occurs, the analysis in this study suggests mixed scientific progress in marketing. Two results point to the discipline’s success in advancing the science of marketing. First, to the extent that scientific progress requires the production and testing of theories, marketing has been remarkably successful. Marketing’s five major journals have published over 1000 explicit tests of theory in the three decades covered by the study. Moreover, the amount of theory testing in marketing’s major journals has increased over this period, suggesting that editors, reviewers, doctoral educators, and other scholars see the value in theory testing. Second, marketing scholars develop the vast majority of the theories that they test. Of the almost 1000 separate tests of theory counted in our study, 80% of them originate in marketing.

Measuring the scientific progress of marketing simply by theory production and testing, however, paints an incomplete picture of our discipline’s scientific endeavors. Some of our results suggest reason for concern. One concern is that, according to our analysis, the vast majority of theories in marketing are tested only once and that the identified endogenous theories are seldomly tested in leading marketing journals. The explanation for this result may lie in part with the journals selected for our study. Our analysis is limited to marketing’s journals as identified by Yadav (2010), whose role is to publish leading edge theoretical and empirical research. In the minds of editors and reviewers, that role may be best filled through the publication of new and novel theories or new and novel approaches to testing existing theory. Consequently, marketing scholars attempting to have their work published in these journals position their research to address new theoretical questions, leaving replications and tests of existing theory to other journals.

Another concern is the breadth or scope of theories developed within marketing. The fact that marketing’s most frequently tested theories originate outside marketing may suggest that the majority of marketing theories produced between 1980 and 2010 may be somewhat narrow in scope and pertain to limited sets of constructs and relationships. In other words, disciplines outside marketing have produced more “big theories” that lend themselves to multiple tests. Lehmann, McAllister, and Staelin (2011, p.160) offer tenure processes as one potential factor contributing to this phenomenon:

More broadly, many tenure letters and tenure cases turn, for better or worse, on counts of “A” journal publications. This discourages junior authors from putting too much in one paper; encouraging them instead to split a really good idea into its various components to maximize potential publications. A consequence of this approach is that to get the paper’s contribution above some perceived threshold for publication, the author loads this “smaller” paper with methodological bells and whistles. This increases the paper’s rating on execution, and thus probability of acceptance, but it also makes the work more complicated and less impactful overall.

While marketing has certainly produced some big theories rich in content and predictions deserving of extensive empirical testing, these tests apparently do not often appear in our top-rated



journals. However, it could simply be the case that marketing scholars do not produce as many broad, far-reaching theories as the disciplines whose theories we frequently borrow.

If the preceding discussion is correct, they speak to the comments by Yadav (2010) and Macinnis (2004). These authors document the sharp decline in purely conceptual articles published in marketing's top-rated outlets over roughly the same period as our study and make a strong case for their importance (see also Stewart & Zinkhan, 2006). Our results may mitigate their remarks to the extent that the hundreds of original theories published in highly rated marketing journals show that marketing scholars do develop theory, but they tend to empirically test their conceptualizations in the same study. In keeping with the comments by Lehmann et al. (2011), that tendency may have a narrowing effect on the scope of the theories being proposed. Beyond the broad theories typically associated with purely conceptual articles, the discipline may benefit from more frequent publication of reviews that synthesize the results of the many narrower theories that are developed and tested in marketing. Indeed, in an editorial in the *Journal of Marketing*, Wind (1979) specifically called for the journal to be “a forum for different types of manuscripts” including “critical reviews and syntheses of relevant areas (p. 10).” Doing so could provide views from the above bodies of work that highlight connections between studies and ultimately provide an impetus for developing new and impactful theories.

The results of this analysis must be considered in light of its shortcomings. First, in a discipline with hundreds of journals, an analysis of five journals provides a limited view of the state of theory testing in marketing. Limited though it may be, however, the journals included in this study are well-respected research outlets and, we believe, a reasonable sample of leading marketing scholarship. Second, because our analysis focused on this limited set of journals, we likely exclude many studies that replicate results of previous research. Undoubtedly, the replication of research results plays a critical role in the advancement of science. Our study neither systematically includes nor excludes the replication of results; however, we acknowledge that the roles of the journals included in our analysis are generally to present new theory and findings and devote less space to replication studies. Third, some readers may disagree with our criteria for designating an article as an explicit test of theory. We acknowledge that operationalizing what is or is not a theory, much less an explicit test of theory, requires making judgments that may be open to criticism. While unanimity might be difficult to find across the thousands of individual judgments made for this study, we are confident that the same analysis made by different writers would produce similar substantive results. These results point toward much success for marketing in its scientific progress, but much more is left to be accomplished.

## References

- Alderson, W. (1965). *Dynamic marketing behavior*. Homewood, IL: Richard D. Irwin.
- Arndt, J. (1981). The conceptual domain of marketing: An evaluation of Shelby Hunt's three dichotomies model. *European Journal of Marketing*, 16(1), 27–36.
- Bagozzi, R. P. (1975). Marketing as social exchange. *Journal of the Academy of Marketing Science*, 3(4), 314–327.
- Bagozzi, R. P. (1984). A prospectus for theory construction in marketing. *Journal of Marketing*, 48(1), 11–29.
- Bartels, R. (1968). The general theory of marketing. *Journal of Marketing*, 32(1), 29–33.
- Brown, J. R., & Dant, R. P. (2009). The theoretical domains of retailing research: A
- retrospective. *Journal of Retailing*, 85(2), 113–128.
- Bunge, M. (1967). *Scientific research, Vol. 1: The search for a system*. New York: Springer-Verlag.
- Chia, R. (2014). Reflections on the distinctiveness of European management scholarship. *European Management Journal*, 32(5), 683–688.
- Chicksand, D., Watson, G., Walker, H., Radnor, Z., & Johnston, R. (2012). Theoretical perspectives in purchasing and supply chain management: An analysis of the literature. *Supply Chain Management*, 17(4), 454–472.
- Easley, R. W., Madden, C. S., & Gray, V. (2013). A tale of two cultures: Revisiting journal editors' views on replication research. *Journal of Business Research*, 66(9), 1457–1459.
- Hernes, T. (2014). In search of a soul of relevance for European management research. *European Management Journal*, 32(6), 852–857.
- Hunt, S. D. (1976). The nature and scope of marketing. *Journal of Marketing*, 40(3), 17–28.
- Hunt, S. D. (1990). Truth in marketing theory and research. *Journal of Marketing*, 54(3), 1–15.
- Hunt, S. D. (1991). *Modern marketing theory: Critical issues in the philosophy of marketing science*. Cincinnati, OH: South-Western.
- Hunt, S. D. (1994). On rethinking marketing: our discipline, our practice, our methods. *European Journal of Marketing*, 28(3), 13–25.
- Hunt, S. D. (2011). On the intersection of marketing history and marketing theory. *Marketing Theory*, 11(4), 483–489.
- Hunt, S. D. (2012). Explaining empirically successful marketing theories: The inductive realist model, approximate truth, and market orientation. *AMS Review*, 2(1), 5–18.
- Hunter, J. E. (2001). The desperate need for replications. *Journal of Consumer Research*, 28(1), 149–158.
- Kaplan, A. (1964). *The conduct of inquiry*. Chandler, PA: Chandler Publishing.
- Kenworthy, T. P., & Verbeke, A. (2015). The future of strategic management research: Assessing the quality of theory borrowing. *European Management Journal*, 33(3), 179–190.
- Kotler, P., & Levy, S. (1969). Broadening the concept of marketing. *Journal of Marketing*, 33(1), 10–15.
- Lehmann, D. R., McAllister, L., & Staelin, R. (2011). Sophistication in marketing research. *Journal of Marketing*, 75(3), 155–165.
- Löbler, H. (2011). Position and potential of service-dominant logic – Evaluated in an ‘ism’ frame for further development. *Marketing Theory*, 11(1), 51–73.
- Macinnis, D. J. (2004). *Where have all the papers gone: Reflections on the decline of conceptual articles* (pp. 1–3). Association for Consumer Research Newsletter, (Spring).
- McMullin, E. (1984). A case for scientific realism. In J. Leplin (Ed.), *Scientific realism* (pp. 8–40). Berkeley: University of California Press.
- Merton, R. K. (1949). On sociological theories of the middle range. In C. Calhoun (Ed.), *Classical sociological theory* (pp. 448–459). Malden, MA: Blackwell Publishing.
- Mir, R., & Watson, A. (2001). Strategic management and the philosophy of science: The case for a constructivist methodology. *Strategic Management Journal*, 10(2), 941–953.
- Morgan, R. M., & Hunt, S. D. (1994). The commitment-trust theory of relationship marketing. *Journal of Marketing*, 58(3), 20–39.
- Oswick, C., Fleming, P., & Hanlon, G. (2011). From borrowing to blending: Rethinking the processes of organizational theory building. *Academy of Management Review*, 36(2), 318–337.
- Peters, L. D., Pressey, A. D., Vanharanta, M., & Johnston, W. J. (2013). Constructivism and critical realism's alternative approaches to the study of business networks: Convergences and divergencies in theory and in research practice. *Industrial Marketing Management*, 42, 336–346.
- Popper, K. R. (1959). *The logic of scientific discovery*. New York: Harper and Row.
- Rudner, R. (1966). *Philosophy of social science*. Englewood Cliffs, NJ: Prentice-Hall.
- Staelin, R. (2005). Eras III and IV: My reflections. *Journal of Public Policy and Marketing*, 24(1), 146–149.
- Stewart, D. W., & Zinkhan, G. M. (2006). Enhancing marketing theory in academic research. *Journal of the Academy of Marketing Science*, 34(4), 477–480.
- Tadjewski, M. (2011). Critical marketing studies: Logical empiricism, ‘critical performativity’ and marketing practice. *Marketing Theory*, 10(2), 210–222.
- Tsang, E. W. K., & Kwan, K. (1999). Replication and theory development in organizational science: A critical realist perspective. *Academy of Management Review*, 24(4), 759–780.
- Webster, F. E. (2005). Back to the future: Integrating marketing as tactics, strategy, and organizational culture. *Journal of Marketing*, 69(4), 4–6.
- Whetten, D. A., Felin, T., & King, B. G. (2009). The practice of theory borrowing in organizational studies: Current issues and future directions. *Journal of Management*, 35(3), 537–563.
- Wind, J. (1979). The journal of marketing at a crossroad. *Journal of Marketing*, 43(1), 9–12.
- Yadav, M. (2010). The decline of conceptual articles and implications for knowledge development. *Journal of Marketing*, 74(1), 1–19.