Having reached the ripe age of 77, my mind has become a bit hazy over what I’ve done during the past 54 years of practicing and teaching marketing research. However, my main marketing themes are simple. First, I believe that marketing itself is an applied activity. Second, it entails a viewpoint and a set of techniques for solving real marketing problems. Finally, it’s important to note that marketing’s viewpoint is pragmatic: apply whatever techniques (drawn from the mathematical and behavioral sciences) it takes to solve the marketing manager’s problem. Contributing disciplines, such as statistics, mathematics, economics, psychology, sociology, and psychometrics, span both science and engineering fields.

When we think of “science,” it tends to conjure up such associations as the need for understanding the phenomena about us (by description, classification, and prediction); an emphasis on results that affect longer-term applications; and gaining knowledge for its own sake. (Why are things the way they are?)

When we think of “engineering,” our associations reflect the need for building something (a model, a device, a procedure, a system) that solves a specific problem (or class of problems) for specific decision makers; emphasis on shorter-term applications with measurable payoffs; gaining knowledge for normative purposes; and constructing something that does a better job than existing systems.

Of course, one can argue that both viewpoints have their place and that developments in basic research often result in developments in applied research. Nonetheless, the approaches differ suffi-
makes perfect

By Paul E. Green

A marketing pioneer examines the value of theory and practice.
ciently to shape our views of their pros and cons. To better understand the evolution of these viewpoints, let’s take a look back at the history of marketing research.

**Behavioral Science**

So-called modern research activities in marketing are largely a phenomenon of the 1950s and later. As has been well documented, the early 1950s marked a shift in the kinds of business education being offered in the United States. Both the Ford and Carnegie Foundations argued for a more theoretical basis for business studies—one that emphasized economics, behavioral science, and quantitative methods (particularly statistics and operations research).

Business school curricula in the late 1950s underwent major reforms, including retreading older professors and exposing younger instructors to more powerful methods and models for business problem analysis. Fortunately for the marketing researcher, new developments in measuring and mapping consumers’ judgments of brand similarities and preferences were also coming to the fore by the 1970s. The source of this flow of ideas lay in the new developments arising in mathematical psychology and psychometrics. Examples included:

- Perceptual mapping of consumers’ similarity judgments
- Preference mapping of consumers’ rank order preference judgments
- Individual differences modeling via Doug Carroll’s INDSCAL (individual difference scaling analysis) perceptual mapping technique
- Hierarchical and partitional cluster analysis of judgments and preferences data
- Conjoint analysis of consumer trade-offs and computer choice simulation

It seemed as though psychometricians had answered the marketer’s dreams of quantifying what were previously intangibles. Researchers in marketing enthusiastically embraced these new developments and several monographs appeared. Not only was measurement and scaling methodology gaining stature in marketing, but consumer behavior paradigms were providing theoretical backup for the new behavioral science tools. To top things off, the *Journal of Consumer Research* was introduced in 1974. This new journal and the formation of the Association for Consumer Research (four years prior) provided substance and stature for the publication of research in consumer behavior.

**Synthesis and Extensions**

It was only natural that the development of new measurement tools, joining up with the continued output of new modeling and optimization techniques, provided fertile ground for a synthesis of the two research streams. Throughout the 1980s, new kinds of models and techniques provided much greater flexibility than the older linear programming algorithms. These included decision support models (ASSESSOR, CALLPLAN, MEDIAC, ADBUDG); simulated test marketing; greedy heuristics; tabu search, genetic algorithms, simulated annealing; Lagrangian relaxation methods for constrained optimization; and divide-and-conquer heuristics. The computer also enabled researchers to come up with close approximations to highly analytical and difficult problems for analysis, sometimes by sheer enumeration of solutions.

Meanwhile, the variety and sophistication of measurement tools progressed. Choice-based conjoint analysis was introduced as well as other types of multinomial logit and probit modeling of consumer preferences. Conjoint simulators were augmented by conjoint optimizers. These models were, themselves, extended to dynamic models of competitive action/reaction sequences.

**The Rise of Research Niches**

The 1990s witnessed an even deeper mining of established techniques and application areas. For example, data analysis techniques and application areas routinely include empirical
and hierarchical Bayesian analysis; generalized additive regression models; tree classification techniques, such as CHAID, CART, and ANSWER TREE; neural networks, such as unsupervised learning algorithms for cluster analysis; MARS-type regression modeling; mixture model fitting, including latent class and clusterwise regression; clustering techniques for mixtures of quantitative and qualitative variables; and expert systems and hybrid models of man and computer.

Application areas included brand equity, relationship marketing, customer lifetime value, database management and data mining, customer satisfaction modeling, and customer retention and acquisition.

In addition to the more traditional research paths of data analysis, consumer behavior experiments, pragmatic modeling, and optimization, researchers were now digging deeper and deeper with new models and methodologies. Moreover, the establishment of niche-type marketing research areas emerged as a new trend. Causal modeling and covariance structure analysis and “no-fat” economic (or theoretical modeling) emerged as examples of the trend.

Each of these areas has a critical mass of researchers whose work appears in top marketing journals. What seems to be missing currently is a strong link between the findings from these new research niches and managerial interest and application. Let’s briefly consider each niche in turn.

**Causal modeling.** With the introduction of sophisticated statistical techniques, “causal” models in marketing emerged in the latter part of the 1980s. While they’re highly popular among proponents, it still remains unclear whether such models will find a receptive managerial audience (although there are some applications in customer satisfaction modeling). More important, the assumptions of causal modeling have come under trenchant criticism by statistician David Freedman and psychometrician Norman Cliff. Both are eminently regarded in their respective fields. Freedman, in particular, is vehemently opposed to the continued propagation of what he views as the fatally flawed assumptions of the causal modeling methods. It’s difficult to predict what effects these severe critiques will have on marketing researchers. So far, applications of causal modeling continue unabated.

**Economic modeling.** The economic modeling niche has fared much better in its reception by researchers in marketing. K.S. Moorthy provides a non-technical description of this research stream. He views economic modeling (which he calls theoretical modeling) as consisting of the following components:

- The researcher observes a phenomenon (e.g., product differentiation by competing suppliers).
- The researcher constructs an economic model to explain the phenomenon.
• A set of assumptions is developed to define a model.
• The researcher then develops the logical consequences of the model, some of which should be empirically testable.
• The model builder examines whether the logical consequences are at least consistent with the observed phenomenon.

Note that this “verification” does not rule out other (equally valid) models. Note also that the theoretical model builder does not necessarily make normative recommendations regarding how the model works in real problem situations.

To my mind, the outside evaluation of other researchers is an important link in maintaining quality control and feedback on the value of new research concepts and methods. In short, industry practitioners are an essential part of the process of methods and model evaluation and bring in additional ideas that help the model builder to build still better models.

Three trends have taken place in the marketing research industry recently. First, marketing research firms, through merger and acquisition, are becoming larger and larger. Traditionally, the top 50 marketing research firms have dominated the field and, if anything, the concentration is increasing. Moreover, research suppliers are rapidly becoming global in their operations.

Second, general management consulting firms are engaging in backward integration by acquiring marketing research affiliates or divisions. Mercer Consulting, for example, has a large and diversified group of marketing research professionals. McKinsey has close ties with a number of full-service marketing research firms.

Third, many of the newer research techniques, such as conjoint analysis and experimental choice analysis, are being accepted and appreciated by higher levels in end-user companies—including executives in corporate board rooms and strategic planning groups.

Taken in concert, these trends bode well for users of sophisticated research tools that can handle strategy-based problems. In addition, new tools for data mining and targeted customer marketing have received increased attention in this age of computers and the Internet.

Academic researchers in marketing have several external publics, including marketing research agencies, general management consulting firms, and end user companies. It has been estimated that there are approximately 1,000 marketing research agencies in the United States, ranging from giants like ACNielsen to small specialized firms. Most research innovations emanate from academics and academically affiliated consultants. These ideas, in turn, typically pass through research suppliers, who have a self-interest in learning the new techniques as quickly as possible because they serve the needs of general management consultants like McKinsey & Company and Booz Allen Hamilton Inc., as well as end-user firms.

Industry practitioners (consultants or internal corporate researchers) have an important evaluative role to play in furthering the continued growth of new research tools and techniques.

Personal Reflections

To my mind, academics should pay considerable heed to what is going on in Marketing Research. Academia can learn much from real world researchers out on the firing line, including which methods and techniques have proven their value in early applications; which methods and techniques have stood the test of time in the marketplace; how academics have addressed their role in testing the value of new techniques in real applications and communicating their findings to academics; and what the potential is for combinations of academics and practitioners in addressing industry and corporate problems. (This may not be as crazy as it sounds—there is some current interest in academic/practitioner combinations working together on real problem situations that could lead to scholarly publication.)

I’m enthusiastic about the growth and sophistication in model building, technique development, and the joint role of academic and practitioner in both developing new ideas and learning how to improve old ideas through real market testing.

After all, the market testing of new products and services is what a lot of marketing research techniques are all about. It’s no wonder that theoreticians and practitioners have much to learn from each other and from their joint experiences in moving our discipline forward.

Morris Hamburg, a wise and witty professor of statistics (and my dissertation adviser), told me early in my career that the best job in academia is being a full professor of something. Clearly, my main joy has been to work with some of the best minds in marketing research and related disciplines. I’ve had...
the rare opportunity to have written papers with 65 different co-authors (23 academics, 20 former doctoral students, and 22 research practitioners).

Starting in the late 1960s (and continuing to the present day), I learned much about scaling techniques from Doug Carroll, my friend and collaborator for many years, and currently the board of governors professor of management and psychology at Rutgers University. He and I wrote two books together and have another in circulation (co-authored with Jim Lattin). Other researchers who have influenced my thinking include Jerry Wind, with whom I have worked the longest—since 1966 when he joined Wharton. Frank Carmone
at Wayne State University, Vithala Rao at Cornell, and Wayne DeSarbo at Pennsylvania State University also have collaborated with me on various articles over the years.

My interest in marketing research methodology started in the 1960s and continues to this day. My principal collaborator during the last two decades has been Abba Krieger, the Robert Steinberg professor of statistics at Wharton. His technical background in theoretical mathematics, operations research, and statistics (with degrees from MIT and Harvard) is outstanding. Helped by his creativity and diverse skills, my interest in data analysis and descriptive modeling has taken a turn toward optimization modeling. The research that the two of us have done over the past two decades reflects an emphasis on normative modeling, such as conjoint simulators and optimizers, competitive pricing models, customer satisfaction optimization, optimal reach analysis, and a variety of other efforts that have led to practical decision support systems.

The Future

Big ideas in market research methodology are rare, and any researcher is fortunate to be associated with one (let alone several) over the course of a career. I have tried to develop the methodological skills needed to tackle various substantive problems, be they research questions on segmentation, pricing, competition, product positioning, or whatever. (This is not the same as learning a technique and going around solely looking for cases in which it can be applied.)

For me, the research process generally starts with a problem. Then I draw on the set of skills and models that offer promise for useful solutions. Other researchable problems stem from critiquing others’ research, consulting assignments, trying to answer questions from students or colleagues, and self-critiquing my own prior research.

As I see it, there are two kinds of researchers in marketing research methodology. The first has a broad range of interests and becomes attracted to interesting and often offbeat problems that appear to be amenable to solutions. Typically, the solutions are interesting and creative but often lack transfer value to other classes of problems.

The second type of researcher starts out with a related set of topics (e.g., interest in clustering methods) and spends time researching the literature, looking for unsolved aspects of the methodology, and tackling one or more of these unsolved problems.

The second approach has the added value of leading to cumulative research contributions that relate to a specific domain, such as conjoint analysis or hierarchical clustering. Although the second approach tends to be more time-consuming, it also prompts the researcher to look for incompletely solved sub-problems or new problems that arise with new findings. Over time, this type of researcher usually has the better chance of making more interconnected contributions to the field.

With few exceptions, my research has focused on methodologies that promise to help practitioners cope with certain classes of problems, such as market segmentation, product positioning, price/demand relationships, distribution, product design, customer satisfaction, and so on. Researchers who take this path do so on the expectation that the client/decision maker will make better decisions if these tools and techniques are correctly used.

Whatever I’ve done, I’ve certainly been one of the luckiest guys around to be able to have worked with such talent as Wind, Carroll, Krieger, and a host of other researchers who have stretched my thinking beyond my wildest dreams. But what we have tried to do will be ultimately judged by talented, younger researchers who will, no doubt, add their important contributions to the field. ●

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