CHAPTER SEVEN: HOW DO WE KNOW WE KNOW: REALITY TESTS

It's not what we don't know that gives us trouble. It's what we know that ain't so.

Will Rogers

Men occasionally stumble over the truth, but most of them pick themselves up and hurry on as if nothing happened.

Winston Churchill

Awareness is a key factor in understanding any phenomenon. The creation of knowledge is no exception to this principle. Researchers who are aware of the approaches they typically take in exploring ideas and solving problems are more likely to develop consistently better information than those who are less conscious of their approaches. This awareness includes identifying the assumptions and concepts used, determining how assumptions and concepts are combined to develop propositions and theories, and knowing what it means to say something “causes” something else.

The construction and contemplation of ideas and problems ultimately leads to an evaluation of their truth and utility. The tests used to determine truth and utility are derived from the frame of reference brought into a situation. This frame of reference can focus on formal, scientific criteria as well as more informal, experiential ones. What we present here are some simple points of view about the frames of reference and tests we use to determine whether an item of information or observation is true and/or useful.

Frames of Reference

As researchers, managers, or consumers, we are constantly making observations about our environment, which are organized to form the “map” of our experiences referred to in earlier chapters. This map represents our point of view or frame of reference in approaching a particular problem, developing a theory, or collecting and interpreting observations. It reflects our perception of the world—our “reality.”

This frame of reference is characterized by our standard assumptions concerning how the world works, by our preferences for particular symbol systems (mathematical, logical, and so on), by our preferences for certain analytical devices to be used in an inquiry, and by our particular role (consumer, manager, researcher) or purpose in attacking the problem in the first place. As Charlie Brown suggests in Figure 7.1, our perceptions of reality may change abruptly and dramatically with very little effort.

However, most people are not always aware of their own frame of reference nor of that used by others. The following scenario, which the reader may have encountered elsewhere, illustrates how costly this lack of awareness can be.
Frames of Reference Determine Conceptualizations of Problems

The second function of frames of reference brings up the distinction between asking what is a problem versus representing a situation as a problem. The use of the word "is" in exploring problems and theories conveys a sense of trying to find something. It is echoed by the sentiment that somewhere in a situation, if we search long enough and hard enough, we will find the right answer. However, this assumes that we know what we are looking for and that there actually exists a correct answer. Anyone familiar with political discussions, business meetings, or simple family decisions knows that substantial time may be spent just determining if something is a problem or not.

A *Journal of Marketing* article by Farris and Albion illustrates this point when discussing the impact of advertising on the price of consumer products. Table 7.1 indicates the two schools of thought regarding this issue. Notice that they are based on two different sets of assumptions concerning how consumers behave. These assumptions have been derived from two quite different frames of reference and result in dramatically different conceptualizations of how advertising affects prices. This example illustrates how different people map the workings of the marketplace. This mapping results in unique conceptualizations, theories, and tests for these theories concerning marketing phenomena. The interesting aspect of both conceptualizations presented in Table 7.1 is that empirical support can be found to support each one.

This can occur because particular frames of reference lead to a tendency to find things as they are expected to be found. Francis Bacon noted this years ago:

> The human understanding, from its peculiar nature, easily supposes a greater degree of order and equality in things than it really finds. When any proposition has been laid down, the human understanding forces everything else to add fresh support and confirmation. It is the peculiar and perceptual error of the human understanding to be more moved and excited by affirmative than negative.

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2. Francis Bacon, 1853.
Table 7.1
Two Schools of Thought on Advertising's Role in the Economy

<table>
<thead>
<tr>
<th>Advertising = Market Power</th>
<th>Advertising = Information</th>
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<tbody>
<tr>
<td>Advertising affects consumer preferences and tastes, changes product attributes, and differentiates the product from competitive offerings.</td>
<td>Advertising informs consumers about product attributes and does not change the way they value those attributes.</td>
</tr>
<tr>
<td>Consumers become brand loyal and less price sensitive, and they perceive fewer substitutes for advertised brands.</td>
<td>Consumers become more price sensitive and buy best “value.” Only the relationship between price and quality affects elasticity for a given product.</td>
</tr>
<tr>
<td>Potential entrants must overcome established brand loyalty and spend relatively more on advertising.</td>
<td>Advertising makes entry possible for new brands because it can communicate product attributes to consumers.</td>
</tr>
<tr>
<td>Firms are insulated from market competition and potential rivals; concentration increases leaving firms with more discretionary power.</td>
<td>Consumers can compare competitive offerings easily and competitive rivalry is increased. Efficient firms remain, and as the inefficient leave, new entrants appear; the effect on concentration is ambiguous.</td>
</tr>
<tr>
<td>Firms can charge higher prices and are not likely to compete on quality or price dimensions. Innovation may be reduced.</td>
<td>Market Conduct More informed consumers put pressures on firms to lower prices and improve quality. Innovation is facilitated via new entrants.</td>
</tr>
<tr>
<td>High prices and excessive profits accrue to advertisers and give them even more incentive to advertise their products. Output is restricted compared to conditions of perfect competition.</td>
<td>Market Performance Industry prices are decreased. The effect on profits due to increased competition and increased efficiency is ambiguous.</td>
</tr>
</tbody>
</table>


The intriguing aspect of Bacon’s observation is that different theorists are able to see support for their theories in the same body of data. Not only are observations laden with theory, but more important, because they are socially construed, they are laden with multiple theories. Frames of reference can be used very creatively to organize any particular sets of facts.

Accordingly, we must scrutinize our own preferences for particular concepts and the assumptions that we bring to a situation. Failure to recognize and surface these assumptions ultimately leads to the “convenient light syndrome,” which is reflected by the following situation:

Late one evening a policeman comes upon a young man who is down on his knees feverishly searching under a light post. The policeman asks what he is looking for. He replies that he has lost his wallet. The policeman inquires where he last had it. The young man replies that he purchased some flowers from a vendor about a half a block away. “Why not look there?” the policeman responds. Questioningly, the young man looks up and states, “The light is better here.”

If the nature of facts bears the imprint of the observer, why is it that we still feel comfortable when reporting facts? One answer seems to be that “observations are impregnated” with several different theories. The following quote is especially relevant as it is drawn from a discussion of the misuse of research evaluating programs of applied change. Although the programs are not explicitly marketing programs, the discussion might well have been addressing the evaluation of marketing programs.

The epistemological problem. The postpositivist thinking that currently predominates in the philosophy of science literature denies the existence of theory-neutral observations. It posits instead that all observations are impregnated with the theory or theories of observers. If this is so, and we believe it is, one implication is of great moment: This is that no single test of a proposition about the effects of a program will involve confronting expectations about the data with theory-neutral observations that provide unambiguous tests of the program. Instead, the effects of the program and the theories (expectations) of the observers are inevitably confounded.

To deny theory-neutral observations does not necessarily imply that scientific observations are impregnated only with the observer's theory. Stegmuller (1976) believes that observations are influenced by multiple theories and Kuhn (1975) now appears to accept this. The possibility that observations are impregnated by many theories may explain the skepticism of some practicing scientists about the denial of theory-neutral observations, for these scientists have seen some stubborn “facts” survive many theories that attempted to explain them. The theories have come and gone, but the “facts” have survived the many different paradigms buttressing the way the observations were made. The point is not that theory-free facts are possible; rather

1Thomas D. Cook and Donald T. Campbell, Quasi-Experimentation: Design and Analysis Issues for Field Settings (Chicago: Rand McNally, 1979).
it is that some observations have been repeated across observers whose operating
theories were extremely diverse.²

Frames of Reference Determine Possible Solutions

Closely associated with determining the concepts used in a theory, a particular
frame of reference also determines the acceptable types of solutions as well as the
means to generate them (that is, analytical devices used).

Considerable effort is expended in business and research trying to find the
correct answer for a particular problem. The pleasure we derive from being
correct can range from a good feeling that the uncertainty is over to the
acclamation of respected peers or some form of monetary reward. The particular
frame of reference used determines which answer or theory is judged correct, or
more precisely, which answer or theory might be more correct than the other.

In marketing research, there are standard sets of procedures that determine the
quality of a particular research study. These include various tests for validity and
reliability of the research results.

Computer models have been developed in marketing to determine “optimal”
solutions for various advertising decisions. One model in particular is DEMON,
or Decision-Mapping Via Optimum GO-NO Networks.³ The focus of the model is
finding a profit-maximizing advertising budget for new products. The particular
frame of reference used includes a mathematical program that links
advertising, sales promotion, and distribution to consumer demand. For
different mixes of the three marketing variables, costs are compared with the
revenue generated to produce an estimate of expected profits. Note that specific
assumptions must be made in this model that determine the link between
advertising and demand. These assumptions ultimately determine what the
“correct” solution will be. If the assumptions or the way the variables are
measured change, the “correct” solution will also change.

Reality Tests

The concern for arriving at the correct or better answer is further exhibited in
particular disciplines or professions. For example, the field of mathematics has
spent a great deal of time and effort developing complicated proofs for
mathematical theorems. The field of statistics reveals methods to determine the

¹ Thomas D. Cook, Judith Levinson-Rose, and William E. Pollard, “The Misutilization of
Evaluation Research: Some Pitfalls of Definition,” Knowledge: Creation, Diffusion, Utilization, 1,
no. 4 (June 1980), 477–499.

² D. B. Lerner, “Profit Maximization Through New Product Marketing Planning and Control,” in
Frank Bass, C. King, and E. Pessinier (Eds.), Applications of the Sciences to Marketing

³ B. Holzer and J. Marx, Knowledge Application: The Knowledge System in Society (Boston: Allyn
& Bacon, 1979).
The key components of any reality test are as follows:

**Subjective experience.** As was stressed earlier, testing a theory or solution involves validating individual experiences. This entails comparing a particular experience with the "map" that has been developed. Does it fit on the map? If so, where, and what does this mean? For example, if you ask salespeople about "what sells a product," you may receive as many different reasons as persons you interview. Each reason reflects the person's interpretation of numerous selling experiences and what caused success or failure.

**A method of observation.** In testing the truth or utility of an observation, we must have some method for collecting the observations.

**Interpersonal confirmation.** In any area the tests that become widely accepted usually reflect the consensus of a large number of people. In reviewing the abilities of potential M.B.A. students, most schools use the GMAT as a key indicator. This high degree of acceptance is due in part to interpersonal confirmation. That is, a variety of people in a variety of situations have independently found the test results to be reasonably accurate predictors of a student's performance in the M.B.A. program. It should be noted that in the early stages (before interpersonal confirmation has had a chance to take hold) people are likely to rely on the source of the test. Is the developer credible, trustworthy, authoritative? These factors again can be evaluated on the basis of interpersonal confirmation, that is, whether many other people use other products or services from this source.

**Consistency.** The tests that are used to validate theories or solutions can be based on a determination of their logical or symbolic consistency. From a logical standpoint: are there any inconsistencies in the argument? If a person says advertising creates interest in a product, and interest leads to purchase, then the logical conclusion would be that advertising leads to purchase. This argument is made independently of whether it is empirically tested or not. For the person making the argument, it is logically true.

From a symbolic standpoint, do we share the same meaning for various objects, ideas, words, or people? On one level this can be represented by a commonality of language used in developing and testing theories and solutions. For example, statisticians use such terms as normal distribution, t-test, regression, and correlation. Businesspeople use terms like gross margin, market share, rate of return, and profit. Clearly, there must be a sharing of terms and what these terms mean if particular tests of theory are to be communicated effectively.

Another level of symbolic consistency revolves not around commonality in language but around how any particular concept or theory is linked back to our experiences in a consistent manner. Scientists refer to these as operational definitions. In more common sense terms, this refers to the types of things you have to experience to indicate that something does or does not exist. This issue is developed more fully by raising the following questions when solving a business problem or doing research. These questions are raised after a problem is given a particular definition.

1. Given your current goals and knowledge, which indicators and how many indicators of this problem or concept must you attend to before you actually count a problem or concept as being observed?
2. Is it possible that you could view some subset of the indicators/observations in item 1 and not recognize the problem or concept or, more importantly, label it as another problem or concept altogether?
3. Do the indicators used allow you to recognize the problem or concept when they are hidden or masked in some way (for example, where there's smoke, there's fire)?
4. If you view these indicators as truly representing the problem or concept, how much distortion (bias, magnification, reduction) can you ascertain?
5. Are the indicators you use of a primarily similar or dissimilar nature; that is, are you digging in one hole all the time, or are you consistently exploring and digging new holes?
6. Are the indicators used likely to be understood and shared by others who are interested in solving the problem or researching the concept?

**Types of Reality Tests**

The previous discussion and guidelines should help sensitize the reader to the possible dimensions of reality tests. This section will make these dimensions more explicit. Seven types of reality tests are discussed. These are shown in Table 7.2.

The key dimensions of the typology are as follows:

- In evaluating an experience or observation, are you focusing on the source (who says so?) or the consequences (what will or did happen)?

**Table 7.2**

<table>
<thead>
<tr>
<th>Source</th>
<th>Consequences</th>
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<tbody>
<tr>
<td>Application</td>
<td>Traditional</td>
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<td></td>
<td>Authoritative</td>
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<tr>
<td>Learning</td>
<td>Rational</td>
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<tr>
<td></td>
<td>Pragmatic</td>
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</table>
What is your prime reason for testing a theory or carrying out a particular research study? Are you interested in learning why something occurs (to create new skills, knowledge, or understanding of a phenomenon or problem) or applying what is already known (application)?

It is important to make explicit which particular tests you or others are using to validate an experience or observation. As you read the explanation of each type of reality test, ask yourself the following questions:

- Who is most likely to use these tests?
- In what context or situation would they be most useful?

Traditional Reality Tests

Traditional reality tests draw heavily on past experience and beliefs to determine the validity of a current observation or experience. These tests reflect information, beliefs, and customs that were developed and handed down from one generation to another. This ensures a continuity in practices and beliefs over time where standard benchmarks are developed and maintained.

In reviewing the concepts and results of a particular marketing research study, an individual using traditional reality tests would ask the following questions.

1. Are the concepts and results consistent with a body of previous knowledge?
2. Are the results compatible with existing assumptions and institutional arrangements in the company?
3. Do the results imply a major change in philosophy, organization, or marketing programs?
4. Do the results agree with the marketing manager's particular sense of the situation?
5. Is the source of the marketing research results someone who knows and agrees with the prevailing ideas and values of the company's marketing management?

The use of traditional reality tests represents an effort to imitate what has gone before and tries not to "rock the boat." It should be stressed that this does not mean that new ideas are not accepted. Rather, new ideas are accepted so long as they are compatible with existing ideas and values. In fact, traditional reality tests can be applied in extremely creative ways to show that a particular observation or experience is in fact compatible with prior ideas and values. This occurs regularly in the fields of science, politics, business, and particularly religion. This creativity is represented by the following story:

A psychoanalyst has been treating a man who firmly believes he is dead. He has believed this for years and has thwarted the efforts of many people to dissuade him. However, the psychoanalyst presents the man with the following argument:

"John, do you believe that you can bleed if you are dead?"
"Certainly not," replies the man.
The psychoanalyst grabs the man's hand and cuts it lightly with a knife. Blood flows from the cut.
"Well, John, what do you say now?"
Astonished, the man replies, "Well I'll be darned, dead men do bleed!"

Authoritative Reality Tests

Authoritative reality tests determine the validity of a particular experience or observation based on an evaluation of the source(s) presenting or backing it. The experience or observation is accepted as "real" only because the source is highly credible and certified as legitimate.

If the authoritative reality test setting were used in reviewing a particular research study, the validity of the results would be determined on the following grounds.

1. Who is the source (person or institution) of the results?
2. What is his or her background and reputation?
3. What degree of trust or confidence do I have in this person or institution?
4. What are the sanctions for not complying with the implications or recommendations put forth by this source?

Examples of authoritative reality tests include the following: choosing between two research companies based on their name or reputation (e.g., Nielsen, Harris, Market Facts); believing the results of a study because they have been presented and endorsed by a senior official in the company; using certain concepts and methods to study a problem because the person most acted on the problem favors those concepts.

Authoritative reality tests take on particular importance in certain types of advertising involving testimonials by credible sources. Diamond Shamrock, for example, used midwestern farmers to promote their agricultural chemicals in the print media. Respected farmers, identified as opinion leaders within their communities, were featured in ads which contained their pictures, names, and addresses and were accompanied by a direct quote in support of the Diamond Shamrock product. This approach proved to be far superior to any other tried by the company, since it provided the degree of assurance needed in the context of a social structure that recognized the legitimacy of the successful practitioner.

Consensual Reality Tests

Consensual reality tests rely on group opinion to determine what is true or not. They reflect tests in which what most people agree is real is taken as the final judgment.
Probably one of the most vivid and classic examples of this type of test occurred in a study conducted by Solomon Asch. Asch developed an experiment in which groups of seven students were gathered in a classroom and told they were going to take a perceptual test. The experimenter placed in front of them two white cardboard cards which had vertical black lines pasted on them. On one card was a single line which was used as a standard. On the other card were three lines differing greatly in length, one of them being equal in length to the standard line. People were individually asked to choose which of the three lines was equal in length to the standard line. Twelve different comparisons were made. After the third trial, six of the seven students (confederates of the experimenter) chose the line that was not the correct match. This pattern varied somewhat but continued through the rest of the experiment. The seventh person, the naive subject, responded after most of the other members of the group had made their choice. Although many of the naive subjects stood fast and chose the correct line, over 50 percent of them agreed with the group's choice when it was wrong (when it was picked as correct two or more times in their choice over the twelve trials). This became even more pronounced as they progressed through the twelve tests and group pressure mounted. Although the measured differences were significant, the prime reality test used by many subjects was the consensus of other members.

Although the Asch study reflects consensual validation through group pressure, there are other instances in which consensual reality tests are used: political elections (who is the "best" candidate) and beauty contests (who is the "most beautiful" woman).

Consensual reality tests are also used in advertising: "Nine out of ten doctors recommend Bayer aspirin to their patients who use aspirin." California Cellars combines authoritative with consensual reality tests in their comparative advertising campaign in which a group of recognized wine "experts" agree that California Cellars is superior to a well-known competitor. In a series of ads, the wine always emerges as that "chosen" over an array of similarly perceived brands.

Since consensual reality tests do not draw heavily from empirical or rational grounds, they tend to be very difficult for any one individual to challenge, especially if these tests have become institutionalized on a broad scale. A new majority rule or an exceptional individual performance is usually needed to change a particular type of consensual reality test.

Magical Reality Tests

Whereas consensual reality tests focus on what people have in common, magical reality tests rely on the uncommon. They reflect situations where only a very limited number of people are able to produce a certain outcome. The manner in which this outcome is produced remains a mystery to the common person. In fact, many times this outcome is seen as the result of a power or influence that derives from a supernatural force.

However, magical reality tests rely on consensus to a degree. This reliance focuses on shared agreement that the final outcome has actually occurred. We do not understand how Houdini performed his feats, but we can experience and agree on the outcome—he escaped in good condition. Similarly, the athlete who far outclasses his field is labeled as "gifted"; or the advertising manager who is always able to come up with the right strategy is labeled a "wizard."

Magical reality tests are similar to pragmatic reality tests in that they focus on the consequences of a particular performance: they are different in that magical reality tests do not promote an understanding of how the outcome occurred whereas pragmatic reality tests do. If you have been in business or spent some time interpreting research results, you have probably heard the expression "I don't know why it works, I just know it works." The person using magical reality tests would attribute it to "luck" or "fate," while a person using pragmatic reality tests would attribute it to "skill" or "dexterity."

Magical reality tests are best exemplified in advertising campaigns for products such as perfume and cosmetics. Most consumers don't understand or care how perfume or cosmetics work; their main interest is in the result. Thus, we are told only that "Second Debut's" secret ingredients magically remove wrinkles and transform you from a middle-aged into a young woman. Magical reality tests are also used by many consumers in the evaluation of truly innovative products and services (such as television, photocopying machines, and microwave ovens). We do not understand how they work nor could we produce the same result, but we accept them because they allow us to do something we value but could not do before. Companies developing some products are frequently viewed with awe and develop a brand loyalty akin to that of a magician or wizard. Accordingly, their name becomes synonymous with the product—for example, Xerox in photocopying.

Rational Reality Tests

These tests typically assess the formal structure of a theory or problem in terms of its logical consistency. This is similar to the example used earlier of advertising — interest, interest — purchase, therefore, advertising leads to purchase. The key point is that the people who use rational reality tests believe that reason and logic alone are sources of knowledge superior to and independent of actual empirical observations. If you were to present a marketing research report to someone who stressed rational reality tests, he or she would focus on the internal consistency of the arguments made in the reports. Do the conclusions logically follow from the initial theories and assumptions? Are the concepts included comprehensive? Are they related in a consistent manner? The actual results of the report are of lesser interest when using rational reality tests.

Rational reality tests are used in some types of personal selling techniques. The object is to present a potential buyer a very tight rational argument for buying. One of these techniques is the "balance sheet" approach. In this approach the
salesperson suggests to the buyer that the only rational way to decide on a particular purchase is to develop a balance sheet with the “pros” on one side and the “cons” on the other. They then generate items under each heading. After doing this, they count up the number of “pro” reasons and then the “con” reasons. If the number of “pros” is greater than the number of “cons,” then it should be “obvious” that the buyer should purchase the product. The use of this approach focuses on getting the buyer to employ a frame of reference that the salesperson can control, where irrational objections don’t count because only rational ones are supposed to be used. Since the number and strength of reasons are the key determining factors, to be logically consistent the buyer must choose that course of action which has the largest number of strong reasons. The salesperson tries to control this by helping the buyer generate “pro” reasons but leaving the buyer on his own when developing “con” reasons.

Empirical Reality Tests

Empirical reality tests rely directly on experience or observation to determine if something is true or not. Many times these tests are used without regard to identifying the particular theory, concept, or assumption that may have “caused” particular observations or experiences.

Examples of empirical reality tests are found among the standardized set of methodological procedures used by a scientific community, such as various tests of internal and external validity, procedures for random assignment, and establishing control groups. There is great concern for controlling any possible biases in the manner in which an observation is collected, analyzed, or interpreted. Debate usually centers on the correct use of a method or if in fact a particular method was the correct one to use in the first place. There is also greater reliance on quantitative rather than qualitative data.

In discussions of what to include in a particular marketing research study investigating the impact of advertising on sales or evaluating an advertising allocation model (DEMON, mentioned earlier), someone would ask the following questions.

- How do we define advertising and sales?
- Can we accurately measure advertising and sales? What methods are most appropriate?
- What other factors do we have to control so that we can say, in fact, that advertising causes sales to increase? Can these factors be readily measured and controlled?
- How many observations do we need to collect and where will they come from?
- How many times do we have to collect observations? That is, how many

*Cook and Campbell, op. cit.*

different times do we have to observe that advertising results in sales before we believe it?

- How generalizable will the results be? Can we use these same results in situations slightly different than the one for which we originally tested (if advertising — sales for facial soap, will that also be true for laundry detergents)?

Criticisms of the results of a study are likely to focus on deficiencies in method rather than on deficiencies in logic.

Pragmatic Reality Tests

Pragmatic reality tests have as their foundation the belief that the meaning of concepts is to be sought in their bearings on actual practice. Their chief function is to guide action. Their validity is tested by their practical consequences or implications.

Internal logic and the application of the scientific method stand secondary in importance to the action implications of using a particular concept or solution in everyday practice. For example, if the results of a research study were presented to someone employing pragmatic reality tests, the following questions would serve as the key criteria in assessing their truth and usefulness.

1. Does the study analyze the effects of factors that decision makers can do something about?
2. Is the study targeted; that is, does it focus on a narrow set of factors?
3. Does the study contain explicit recommendations?
4. Do these recommendations have direct implications for a course of action?
5. Do the results add to practical knowledge of the operation of current or future policies and programs?

These questions are representative of what many would call the prevailing philosophy of businesspeople. This philosophy is commonly used to discredit much academic research as being too “ivory towerish.” "You don't know what's going on out there—that won't work in the real world." "Real" to the user of pragmatic reality tests focuses on the feasibility of implementing results or recommendations in day-to-day affairs—predominantly in the short run. These daily realities can be represented by the economic, legal, political, or social constraints that might restrict the believability or usefulness of the results. There is thus sometimes a poor fit between how map makers and map users evaluate information. For example, assume you are located in a large jungle and face the task of finding your way out. Apart from an assurance that you won't come to physical harm, you would probably want some navigation aid such as a map of

the jungle. As luck would have it, you stumble upon a document labeled “Map of the Jungle.” How would you feel upon the initial discovery of this document? How would you feel afterwards when, upon opening the map, you discover that it displays only features of the jungle that are rather unimportant for finding your way out? The situation is not unlike many areas of research in marketing. Often it is only rather inconsequential matters which get mapped. The mapping of inconsequential matters may be done so well in terms of other reality tests (citation of other research, justification of methodology) that the results appear more consequential than they are. Exhibit 7.1, “Do Chickens Have Lips?” is a tongue-in-cheek illustration of this point.

A theory or piece of research that is “interesting,” as discussed in Chapter 2, is likely to be consequential. This is especially so if the ideas (theory, research findings) might result in many people altering much of their thinking. One way of deciding what important features of a problem or issue area should be investigated, that is, what the salient features of the jungle are which should go into the map, is by making observations in a natural setting. Robert B. Cialdini uses the metaphors of trapping and scouting to illustrate this point. The construction of a trap (for example, an appropriate field or laboratory experiment) to ensure the effect of a promotional theme or a product attribute or a sales training program is extremely important. It also requires substantial skill. But how does one know that what has been trapped is worth going trapping for? Advance scouting will help identify the big game. The scouting should not be done in the trap but rather in the natural environment where the game live. Cialdini provides a number of examples of important social psychological principles which were first observed in their natural settings. This is the start of “full-cycle” social psychology.

Wherein initial natural observation gives direction to subsequent controlled experimentation, the outcomes of which can then be given external validation through further natural observation that may stimulate still further experimentation. Systematic recourse to the evidence of the real world both before and after performance of the experimental work may thereby reduce the extent to which current social psychological research can be criticized as artificial and epiphenomenal.15

This approach, if pursued more rigorously in marketing, would probably yield more academic research which could pass the pragmatic validity tests for practitioners.

The reality tests discussed above are far from exhaustive and are not mutually exclusive. They may be used in various combinations, and the same individual may employ different ones in a situation to draw out preferred modes of

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10 Ibid., p. 44.

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**Exhibit 7.1**

On Fowl Oral Apertures: Do Chickens Have Lips?

<table>
<thead>
<tr>
<th>Lawrence H. Frank</th>
<th>James C. Gage and Robert K. Klepac</th>
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<tbody>
<tr>
<td>3222 Cottonwood Avenue</td>
<td>Department of Psychology</td>
</tr>
<tr>
<td>Bellingham, Wash. 98225</td>
<td>Fargo, North Dakota 58102</td>
</tr>
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<tr>
<th>Chicken Little</th>
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<tbody>
<tr>
<td>Department of Farmology</td>
</tr>
<tr>
<td>North Dakota State University</td>
</tr>
<tr>
<td>Fargo, North Dakota 58102</td>
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</table>

Although the piercing question has plagued serious thinkers since the time of Aristotle, Bloodlip (1923) was the first to apply the methods of science to the question: do chickens have lips? Bloodlip kissed 38 chickens, recording his impressions carefully after each kiss, and concluded that chickens have sharply pointed beaks, but not lips. Bloodlip’s procedures, however, called this conclusion to question: in addition to his small n and the lack of adequate controls, Bloodlip by his own report did not know the chickens very well (1923, p. 42) and may have been perceived, as a master, therefore inhibiting the animals’ lip-pucker response. This suspicion is supported by Bloodlip’s discussion, in which he notes that the experimenter required 33 stitches in and around his lips during data collection (p. 246).

Other studies present indirect evidence for the existence of lips in chickens. Henlover and Strange (1969), for example, offered chickens a choice between identical gold-colored tubes, one of which was filled with Mealworms’ the other with lipstick (Avon, Passion Apple Red). All subjects showed a marked preference for the lipstick. Similar results were obtained in replications using Come-To-Me Pink and Tempting Tangerine (Henlover and Strange, 1969, p. 4). The hypothesis that these results may be a simple result of the lipstick’s greater nutritional value may be ruled out by the authors’ incidental observation that the chicks did not engage in consumatory behavior, but rather smeared the substance around their oral orifices by rotating their heads in a manner reminiscent of the oscillating behavior so long noted among graylag geese.

These findings were extended by Feather and Comb (1971), who found an interaction between chicken strain and lipstick preference. When offered a choice, White Leghorn hens preferred Primrose Pink to Candy-Apple Red, while Rhode Island Reds preferred the darker shade. The authors’ prediction that, like females of other species in whom the presence of lips has long been demonstrated, chicks would select colors more flattering to their complexions, and avoid choosing a shade which might render lips conspicuous.

While the studies of Henlover and Strange (1969) are compelling, they suffer from two weaknesses. Their heavy reliance upon lipstick preference as the sole dependent variable requires a greater degree of inference than Bloodlip’s more direct approach. Secondly, the studies used subjects who were housed in barnyard chicken coops, leaving open the possibility that lipstick application is the result of drab sociocultural backgrounds rather than a natural consequence of one’s having lips. The present study represents an attempt to rule out these factors in a further exploration of the lip-beak controversy.
HOW DO WE KNOW WE KNOW: REALITY TESTS

Method

Subjects: Source and Maintenance. Subjects were 60 females, Bantam roosters, obtained from Honest Harry's Restaurant and Experimental Station, Fargo, North Dakota. Prior to data collection, subjects were housed for three months in individual parlors, equipped with mirrors, showers, and self-grooming aids. Ss were maintained on a 10-hr. photo-period, which began each day at 5 A.M. when Ss were awakened by an alarm clock (Baby Ben #4348).

Experimental Design and Procedure. Two tests of lip-presence were employed. In the first, all chickens were grasped by the neck and pressure was increased until visual apparatus protruded at least 4 millimeters from their sockets. It had been found in pilot studies that at this point, all chickens open their mouths in protest. A smooth square of malleable material (Play-Doh Corp. #14586—green) was inserted into the mouth, and neck pressure immediately released. Pressure was then reapplied, and the material removed. Imprints of each subject's oral aperture were thus obtained.

The second test was a variation of Bloodlip's (1923) earlier technique. Sixty male college sophomores served as chicken-kissers, and each was randomly paired with a chicken. Pairs were given an opportunity to get to know each other, during which time the chicken kissers spoke pleasantly to the hens, occasionally offering a bit of grain, and engaging in any additional pleasantness which they saw fit. When the chicken kissers felt that adequate rapport had been established (in no case less than two hours nor greater than three hours), each male placed his right hand behind the hen's comb, looked woeingly into her eyes, and gave her a 7-sec peck upon the oral aperture. Kissers then rated their impressions of the experience on a seven-point bipolar scale, bracketed by the words "lips" (1) and "beak" (7).

Results and Discussion

Microscopic examination of the mouth imprints by 14 lip experts (all professional politicians) showed conclusive agreement that chickens do have lips. A typical fly-by-night analysis of variance (Frank, 1973) was run on the chicken-kissing data. The analysis yielded a significant difference between the number of students stating that chickens do have lips and those reporting that the opposite was true. Subsequent analyses revealed results which are contrary to the experimenter's hypothesis, hence the data were unfortunately lost in a fire and cannot be reported here.

The present findings are in direct contradiction to those reported by Bloodlip (1923), suggesting that his study was grossly affected by experimenter bias. Rather, the findings presented here support the contents of Feather and Comb (1971) and Henlover and Strange (1969), that chickens do in fact have lips. In post-experiment interviews, however, all participants claimed extensive knowledge about lips, and claimed to have experienced kissing.

In a subsequent study, college students were blindfolded and presented either with a chicken or a volunteer housewife, which they kissed. In every case (n = 243) students reported having kissed lips, regardless of the species with which they had been presented. In addition to removing any doubt about the existence of chicken lips, these data have interesting implications for the study of henpecking in marital constellations.

It having been demonstrated conclusively that chickens have lips, further research is needed to determine the biological significance of the beaktype like appearance of those lips. Informal observation by the present authors suggest that henst find human kisses noxious, suggesting that evolutionary pressure might account for the phenomenon. This notion requires validation but is consistent with Bloodlip's (1923) observations, and with the widely accepted fact that humans seldom kiss chickens except for the sake of science.

Footnotes

1 Frieda Fallc (1953) demonstrated that chickens prefer meatworms to snakes (p. 0001).
2 The other ½ subject was dropped from the study because the E's were unable to locate ½ of a male college sophomore.
3 Ethical considerations dictated against allowing Ss and kissers free choice of partners, since undue extra-experimental involvement might then ensue.

References


ascertaining truth or utility. It is particularly important, however, to determine how these reality tests are distributed among various participants with regard to a particular marketing problem.

It should also be kept in mind that reality tests can be described in different ways. For example, William Dunn offers an interesting perspective. He suggests that three standards are used to assess the usefulness of knowledge. One standard relates to relevancy: Is the information appropriate to a given problem? Was it on time? A second standard concerns adequacy: Does it satisfy a manager's criteria for truth? Were appropriate statistical tests used or research designs employed? A third standard concerns cogency: How persuasive is the finding? What are the statistical confidence limits used?

Elsewhere Dunn has suggested alternative models which may account for the use and nonuse of knowledge by public policy makers:

1. Product-contingent model. The characteristics of goods of social science research (form, content, language, length, reliability, validity, timeliness) determine the scope of knowledge use by policy makers.

2. Inquiry-contingent model. Differences in modes of inquiry used to acquire, process, and interpret information (research design, analytic techniques, observational methods, sampling) determine the scope of knowledge use by policy makers.

3. Problem-contingent model. The characteristics of policy problems (levels of conflict, uncertainty, and risk associated with attempts to satisfy needs or realize opportunities) determine the scope of knowledge use by policy makers.

4. Structure-contingent model. Variations in the structure of organizations (authority responsibility, power, and incentive systems) determine the scope of knowledge use by policy makers.

5. Process-contingent model. The nature of interaction (authoritarian, delegative, collaborative) among producers and potential users and beneficiaries of knowledge determines the scope of knowledge use by policy makers.

Another study strongly suggests that these models are highly appropriate (although differentially so) to marketing managers.  

**Summary**

Reality tests have the following functions.

1. **Reality tests determine acceptable solutions to a problem.** Becoming aware of the different reality tests increases our chances of "seeing" different solutions to a problem and decreases our chances of solving the "wrong" problem (that is, developing solutions that don't change the things we want or developing solutions that are worse than the original problem).

2. **Reality tests determine resistance to new ideas.** Habit is a strong motivator for all individuals—most people will do as they have done before rather than try something new. To understand people's resistance to new ideas or their rejection of the results of a particular research study, you must tap into the particular reality tests they are using. As was pointed out earlier, people can be very creative in retaining a particular mode of thinking even when faced with what others consider the "empirical facts."

3. **Sensitivity to different reality tests reduces translation problems.** Frequently we reject an idea or observation because we don't understand the jargon used to present it. More seriously, we may reject it because we don’t understand or agree with the underlying assumptions or analytical devices used to generate the idea or observation. Identifying reality tests explicitly aids in the translation process that is needed if people are to communicate effectively. This becomes all the more important given that a substantial number of business and academic research projects are group projects.

Two other observations will conclude this discussion of reality tests.

First, **reality tests are interdependent, not independent.** The presentation of reality tests in this chapter may give the impression that they can be applied independently. In some situations this may be the case, however, most problems or concepts we deal with are sufficiently complex that **multiple reality tests** are used to determine their validity. Earlier the case of GMAT's was presented. However, when the eligibility of a student is being determined, another reality test will play a role (examples: are the parents alumni (traditional); have we admitted enough minority students to meet current government policies (authoritative); will the student do well in the business world (pragmatic). A researcher uses both rational and empirical tests to evaluate a theory. Consensual plus pragmatic tests make up what we call "common sense." It is the **interdependence** of reality tests that must be understood if modern-day problems and concepts are to be solved and tested in an interesting and creative manner.

Second, **reality tests are contextual in nature.** The interdependencies of reality tests are reflected in the wide variety of roles that we play (consumer, manager, researcher, or whatever) or that are played by others in a particular situation. One of the goals of this chapter has been to sensitive the reader to the situations in which different types of reality tests might be used. Determination of the contexts in which particular reality tests might be used and are most useful remains an important yet unresolved issue. However, the degree of resolution will increase as awareness of the different types of reality tests used and their role in determining your particular "map of the world" is explored through everyday experience.
