Evaluating and Improving Argument-Centered Works in Marketing

Robert Skipper & Michael R. Hyman

Marketers have yet to adopt a standard repertoire of techniques with which they can critically evaluate argument-centered works. Certain analytical techniques of the logician are proposed for evaluating such works. The authors provide an example to illustrate the use and value of these techniques.

Imagine a world in which marketers are relegated to presenting and debating empirically derived conclusions without the aid of statistics or probability theory. In such a world, all scholarly discussions would be no more than mere exchanges of opinion or interpretations of data in accord with the latest theoretical fads. The end product of such discussions could hardly be called a science.

To some extent, marketers are in such a situation today with respect to a certain category of marketing works. For lack of a better term, we designate the works in this category “argument-centered” works. An argument-centered work is any work in which the conclusion (consisting of one or more theses), stated predominantly in a natural or nonformal language, seems to be drawn on the basis of evidence presented in the work. The earmark of such a work is that it contains nothing resembling a rigorous proof, yet the conclusion apparently “stands to reason” or “is intuitively obvious” given the premises.

A danger is inherent in all such works: the seeming “obviousness” of their conclusions can lull even the most careful scholar into accepting them as plausible. Unfortunately, the subjective impression of obviousness does not guarantee objective validity. “Obvious” conclusions, if subjected to rigorous examination, can prove to be either false or self-contradictory. Therefore, without a generally accepted, suitable method of evaluating arguments, all debates about the conclusions of argument-centered works are in danger of regressing into “mere exchanges of opinion or interpretations of data in accord with the latest theoretical fads.”

If argument-centered works are important for marketing (as we subsequently show), marketers should be able to (1) critically evaluate them and (2) salvage as much as possible from works that contain errors of reasoning. However, the technical means necessary to evaluate argument-centered works are not currently within the repertoire of most marketing scholars. Fortunately, modern developments within logic and philosophical analysis have made available certain tools suitable for evaluating and improving such marketing works.

We propose that the marketing community accept and frequently use well-established logical and philo-
Sophistic tools to evaluate and improve argument-centered works in marketing. To acquaint marketers with the power and value of these tools, we discuss and exemplify some of the most readily applicable ones.

**The Importance of Logic and Philosophy to Marketing**

To understand the importance of logic and philosophical analysis for marketing, as a first step consider the following typology: (1) argument-centered works, (2) nonargument works, and (3) proof-centered works. We have defined argument-centered works. A nonargument work is one that either has no conclusion or has a conclusion but does not purport to contain any natural-language argument or mathematical proof upon which that conclusion is based. A proof-centered work contains a conclusion argued in a "formal language" and usually consists of either at least one fairly mathematicized theorem derived from others or mathematicized theorems applied to data samples with interesting results.

For example, an article that merely reports the results of some survey, S, would be a nonargument work. An argument-centered work might propose and justify a theory, T, that could predict some previously unmeasured statistic on the basis of surveys like S. A proof-centered work might either derive T algebraically from some other theory, show how T is mathematically incompatible with some other theory, or simply compute the actual statistic predicted when T is applied to the results of S.

As a second step, consider the possible relevance of the ability to evaluate logically and philosophically each of these types of work. Clearly, the argument-centered work stands to benefit greatly from applying argument evaluation and improvement techniques. Just as clearly, the ability to evaluate arguments critically would be completely irrelevant for nonargument works. Somewhat surprisingly, it is unnecessary to apply the tools offered by logic and philosophical analysis to proof-centered works because their conclusions are seldom obvious and are based on highly systematized conclusion-drawing techniques in which logic is already incorporated and philosophical analysis is already embodied (e.g., hypothesis testing, experimental design, model testing, scientific sampling). Furthermore, it would be a waste of time and energy (other than as a pedagogical exercise) to scrutinize carefully the peripheral arguments (i.e., arguments not essential to establishing the main thesis) of any work, because a critique of a peripheral argument is a quibble and an improvement of one is merely cosmetic. Therefore, philosophical and logical analysis is important to marketing if and only if argument-centered works are important to marketing.

Finally, as a third step, consider the following question: How important are argument-centered works for marketing? The answer cannot be established empirically (e.g., calculating the percentage of argument-based works in a fair sample of recently published scholarly marketing articles would establish the popularity but not the importance of these works; determining the relative frequency of argument-centered works among the set of prize-winning articles in marketing would show only the perceived importance of argument-centered works). What needs to be shown is not whether this type of article is popular, oft-cited, respected, or well received, or even that any such articles exist, but whether it is crucial for the foundations of marketing that such articles be written and that they be as strong as any available tools of reasoning can make them. Because an empirical investigation cannot decide this issue, an a priori plausibility argument follows.

- In any work containing a thesis, the thesis is either substantiated (i.e., argument- or proof-centered) or unsubstantiated (i.e., nonargument). An unsubstantiated thesis may be entertaining, but is scientifically useless because nothing can be securely built on it. Such a thesis may be merely the expression of one author's opinion and there may be as many conflicting opinions as there are authors.

- Of the works with a substantiated thesis, the proof-centered variety appears to guarantee the certainty of the conclusion. Hence, one might think the proof-centered work should be the paradigm for all marketing works. It should not, however, because a rigorous proof is only a method of theory expansion, not theory generation or theory grounding. As a proof-centered work can confer on its conclusion no more certainty than is already contained in its premises, any foundation for the science of marketing must be sought in the argument-centered work.

- If knowledge acquisition (i.e., acceptance by the scientific community of generalized claims that approximate truth and the mathematical extension of these claims to cases beyond the original evidence on which they are based) is the goal of marketing, and if knowledge acquisition is possible, argument-centered work is the only way of rationally certifying the science of marketing. Clearly, knowledge acquisition is important for the science of marketing. Furthermore, the enterprise of science presumes that knowledge acquisition is possible. The ability to evaluate argument-centered works therefore is important for marketing and any tools that
might enhance this ability should be investigated.

As a practical matter, where can one expect to find argument-centered works? They appear in virtually every scholarly marketing journal. They can be found among articles under the rubrics of (1) philosophy of science, (2) metatheory, (3) critical review of the literature, (4) theory or model building, and (5) "think piece" (i.e., an article that introduces novel concepts or uses familiar concepts in a novel manner). Of course, not every work that fits any of these categories can automatically be labeled as argument-centered. For example, a work in philosophy of science may be simply a didactic exposition of the history or results of some relevant metatheory and hence draw no conclusion. Even a think piece may be of the "gosh/wow/eureka!" variety, wherein no more is attempted than the drawing together of a few interesting facts and the raising of some puzzling questions.

What This Article Is and What It Is Not

Our article has three goals: (1) to introduce and explain various important analytical tools, (2) to outline a process for a careful philosophically oriented review of an article with an argued thesis, and (3) to provide a specific illustration of this process, but only in sufficient detail to indicate the kind of results one might usually expect (i.e., the analysis is only a detailed sketch). By the end of the exposition it should be clear how these tools are not only applicable in critiquing arguments, but also helpful in reworking and strengthening arguments. Thus, the article might be described best as a tutorial in constructive philosophic analysis for the marketer.

The article is not intended to be a critical review of any work. Admittedly, an actual marketing article (Hirschman 1985) was selected, rather than a fictitious example, to illustrate the step-by-step process by which marketers might use the logician's tools. The Hirschman article was chosen for two reasons. First, it is a nearly perfect example in that it contains spring-boards for discussing several important points of criticism as well as interesting points worth developing and improving. Second, the matter makes our article self-referential (i.e., the resulting "improved argument" is highly relevant to the issue we address).

Our article is not concerned directly with the philosophy of science. In a philosophy of science article, words such as "simplicity," "theory," and "explanation" would be used frequently. Instead, we use words such as "validity," "soundness," and "argument." Furthermore, much of what we discuss is ways of analyzing the truth functional relations between sentences (e.g., logical entailment) and not ways of relating "facts" to "statements of fact" (e.g., empirical confirmation).

Though not an example of it, our article is connected closely with philosophy of science. Authors of philosophy of science works (e.g., Hunt 1983; Zaltman et al. 1973, 1982) tend to assume, but seldom discuss, the tools of elementary philosophical analysis. For example, Zaltman et al. (1973, p. 93–4) indicate that "well-formedness" is one criterion for evaluating theories.

"Well-formedness" . . . conveys the idea that the propositions contained in the theory and the ways they are interconnected should conform to (1) some rules of "composition" or formation . . . and (2) some rules of "transformation" that correspond to what is required by elementary logic or more complex syntax. Such a criterion is generally left aside by most philosophers [presumably philosophers of science] because of its triviality and consequently should be considered as a sine qua non condition for any theory that purports to be communicable to others.

Trivial requirements are trivial only so long as they are not violated. This does not mean they are useless or can be safely ignored. In fact, by referring to logic as a sine qua non condition, the authors seem to be saying that theory builders must be conversant with elementary logic before delving into the complexities of actual theory construction.

Finally, our article is not intended to present an exhaustive inventory or a complete methodology. We describe only a small fraction of the tools philosophers have found useful in evaluating and improving arguments, tools that are immediately available, fairly straightforward and foolproof, virtually mechanical in their application, totally noncontroversial, and readily organizable. Exposition of a complete methodology would require an extensive treatise on (1) the scope and limits of theorems within formal language systems and (2) the adequacy of the plethora of current formal languages for representing natural language. All we offer is a "teaser" to pique the marketer's interest in pursuing a previously neglected approach for evaluating an important area of the marketing literature, an area sometimes felt to be immune to rational criticism because of its looser style of presentation.

Some Preliminary Definitions and Their Consequences

The first tool of logical analysis, in terms of both its relative simplicity and fundamental nature, is the sentential calculus. The sentential calculus is a method of symbolizing and evaluating the truth functional relationships between complete sentences.

All sentences are thought to have one of two possible truth values, either T or F (some textbooks use 'True' and 'False', others '1' and '0', etc.). Any sentences of the form 'A or B' can be split into two dis-
tinct sentences ‘A’, ‘B’, and a logical connective ‘or’. The actual truth value of ‘A or B’ is dependent on the actual truth values of ‘A’ and of ‘B’. The relationship between ‘A’, ‘B’, and ‘A or B’ is called a true functional relationship. Some other truth functional relationships are ‘and’, ‘if . . . then . . . ’, and ‘if and only if’.1

In arguments, there is sometimes a special type of truth functional relationship announced by the word ‘therefore’ or its equivalent. This relationship is called logical entailment. In the strict logical sense, any argument whose sentences support this relationship is said to be valid. The validity of an argument is a function of the possible, rather than just the actual, truth functional relations holding between the conclusion and the set of premises.

Some more precise definitions may be useful at this point. An argument of length N is any finite string of N sentences, where N > 0. A valid argument is a string of N sentences (N > 0) such that it is impossible for all of the first N – 1 sentences (usually called the premises) to be true and the Nth sentence (the conclusion) to be false simultaneously. A tautology is a valid argument of length 1. A sound argument is a valid argument with true premises. A contradiction is any sentence whose denial is a tautology. These apparently innocuous definitions have several important, though not obvious, consequences.

Consequence 1. A valid argument need not be stated in traditional syllogistic form. For the most part, the notion of a syllogism is not relevant to the modern logician armed with the sophisticated weaponry of symbolic logic (as introduced by Whitehead and Russell 1910 and subsequently developed into its current forms). Unlike the traditional syllogism, which consists of exactly three sentences (i.e., a major premise, a minor premise, and a conclusion), the preceding definitions imply that an argument can consist of any finite number (N > 0) of sentences, provided that one of these sentences is designated as the conclusion.

Consequence 2. An argument containing a contradiction in the premises is always valid. It is very difficult for the nonphilosopher to become comfortable with this consequence, though it follows immediately from the definition of a valid argument. (Proof: Because it is impossible for a contradiction to be true, if a contradiction is present in the premises, it is impossible for all the premises to be true. It is therefore impossible for all the premises to be true and the conclusion false simultaneously.)

Two examples illustrate this point. Once a contradic-

1We follow the convention of the philosophy literature in our use of single quotation marks. In this usage, it is only the shape of the expression bounded by quotation marks that is of importance, not its meaning.

Proof sketch:

Assume that 0 = 1.

First it is shown that 55 = 0. Because 55 = 55 × 1 (by the definition of 1) and 0 = 1, 55 = 55 × 0. But 55 × 0 = 0 (by the definition of 0), so 55 = 0.

Second, in a similar fashion, it is shown that 22 = 0.

Finally, by substitution and commutation, 55 = 22.

In logic, a similar argument can be constructed. Let S be any arbitrary sentence. By assuming two contradictory premises, we can derive S as follows.

Proof:

(1) Socrates is a man. Assumption
(2) Socrates is not a man. Assumption
(3) Either Socrates is a man, for S. By (1) and addition

Therefore,

(4) S. By (2), (3), and excluded middle

Thus, by assuming a contradiction anything can be validly proven.

Consequence 3. If reasoning validity from a set of premises results in a contradictory conclusion, a contradiction must be present among the premises. In other words, the only way to argue validly to a contradiction is to begin with a contradiction. This consequence can be proven as follows. Assume (1) a valid argument and (2) a conclusion that is a contradiction. Because contradictions are always false, if it were possible for all the premises to be true, it would be possible for the premises to be true and the conclusion false simultaneously. However, by the definition of validity this cannot happen, so it is impossible for the entire set of premises to be true; hence, the premises must contain a contradiction.

One interesting point to notice is illustrated by the case of no premises and a self-contradictory conclusion. At first one might think it is impossible for all the premises to be true (and the conclusion false) because there are no premises, and that therefore the argument is valid. However, this is fallacious reasoning. Just as in mathematics there are peculiar conventions associated with zero (e.g., it never serves as a denominator), so in set theory there are peculiar conventions associated with the empty set, such as its being a subset of every other set.

Because in logic having a property is usually construed as being a member of a set, all members of the empty set have every property. Hence, as there are no unicorns (i.e., the set of unicorns is the empty set), all unicorns are purple (i.e., the set of all unicorns is a subset of the set of all purple things) and all unicorns...
are also not-purple. For this reason, all premises of an argument of length 1 are true. Therefore, it is possible for all the premises to be true and the conclusion false simultaneously. Philosophers normally call such universal claims (i.e., any sentence of the form ‘All x’s are F’), wherein no instance exists, “vacuously true.”

Consequence 4. No matter what the premises assert, an argument is valid if it is impossible for the conclusion to be false. In other words, an argument of length N > 1 containing a tautology as its conclusion is always valid and all the premises are “otiose” (i.e., purposeless). For example, because true premises to a valid argument guarantee soundness by the preceding definition, the following argument is both valid and sound.

\[ \begin{align*}
P_a: & \text{ Some horses have tails.} \\
P_b: & \text{ Green is a color.} \\
C_b: & \text{ Therefore, Portugal is Portugal.}
\end{align*} \]

This argument is logically correct, though aesthetically it is less than desirable. The problem lies in the fact that \( C_b \) is a tautology, that is, true under all interpretations of the word ‘Portugal’. \( C_b \) is true whether ‘Portugal’ is a term denoting a country in Iberia, the number fourteen, a friend’s dog, or any other object one might choose, provided only that both occurrences of ‘Portugal’ in \( C_b \) denote the same object. Thus, the set whose only element is \( C_b \) is a valid argument, though containing no premises. The sentences \( P_a \) and \( P_b \) will not serve a useful purpose within any argument containing \( C_b \) as a conclusion. Such premises are otiose and, for lack of a better term, we call an argument that does not contain any otiose premises an “elegant” argument.

Consequence 5 pertains to the notion of simultaneity. If an argument (1) does not contain a contradiction in the premises and (2) does not contain a tautology as a conclusion, the only way the validity of the argument can be established is to show that the simultaneous truth of all the premises and falsity of the conclusion is impossible. Note that “impossible” in this context does not mean “implausible,” “unlikely,” “false,” or “silly,” nor does it mean “impractical given our current state of technology” or “contrary to the laws of nature.” To claim that sentence S is impossible is to claim that there is no imaginable circumstance under which S could be true, in this universe or in any other. We return to this notion in the next section.

The advantages of the sentential calculus become apparent throughout our exposition. However, the sentential calculus cannot be used to evaluate all sequences of sentences. In particular, it cannot help to evaluate (1) sentences having no truth value, such as questions, exclamations, commands, or performatives, (2) arguments requiring an analysis of the internal logical structure of sentences, rather than the relation between simple and/or composite sentences (e.g., the sentences ‘All crows are black’ and ‘This crow is black’ are logically related, but contain no explicit logical connectives), and (3) arguments in which the relationship between sentences is not obviously a truth functional one (e.g., sentences containing causal claims). Each of these limitations of the sentential calculus has provided a rationale for further developments of more sophisticated formal languages. This does not mean the calculus has been replaced. In fact, the original calculus has remained as the unchanged foundation of all the more language-sensitive systems.

An Overview of How to Evaluate and Improve Arguments

Figure 1 is a flow diagram illustrating a fairly mechanical method for philosophically examining and improving any argument that has as its conclusion some sentence not of the form ‘If A then B’. This type of evaluation is analogous to methodological evaluations of proof-centered works, the only difference being that it uses the standard sentential calculus (i.e., symbolic logic; cf. Quine 1966 or Tarski 1965 for a concise introduction to the topic). This methodology is accepted explicitly or implicitly by all scientists and is therefore noncontroversial in virtually any scientific context.

Tests are indicated in Figure 1 by ovals, decision

**FIGURE 1**

Evaluating and Improving Arguments with Conclusions Not of the Form ‘If A Then B’

\[ \begin{align*}
\text{ASSUME PREMISES} \\
\text{ASSUME DENIAL OF CONCLUSION} \\
\text{IS THERE A CONTRADICTION?} \\
\text{NO} \\
\text{ARE ALL OF THE PREMISES TRUE?} \\
\text{YES} \\
\text{CONCLUSION NEED NOT BE AFFIRMED} \\
\text{AFFIRM CONCLUSION} \\
\text{ARE ALL OF THE PREMISES NECESSARY?} \\
\text{NO} \\
\text{VALID, SOUND & ELEGANT ARGUMENT} \\
\text{ADD/DELETE/}
\text{MODIFY PREMISES AND/OR ALTER CONCLUSIONS} \\
\text{MODIFY PREMISES} \\
\text{VALID, SOUND & ELEGANT ARGUMENT} \\
\text{ELIMINATE OTIOSE PREMISES}
\end{align*} \]
nodes are indicated by circles, and assumptions, tasks, and conclusions are indicated by rectangles. The application of this method can be summarized as follows.

1. Test the validity of the argument. (Validity is indicated by the assumptions, conclusion, and task associated with the uppermost oval, the test that reads, “Is there a contradiction?” The argument is valid if one can proceed beyond the uppermost “Yes” decision node.) Should the argument prove invalid, modify it until a new, valid version emerges.

2. Test the soundness of the argument. (Soundness is indicated by the conclusion and task associated with the central oval, the test that reads, “Are all of the premises true?” The argument is both valid and sound if one can proceed beyond the central “Yes” decision node.) Should the argument prove unsound, modify the premises until only truths remain. Repeat this process until a both valid and sound argument has been produced.

3. Test individually each premise of the resulting valid and sound argument for its relevance to the conclusion. Eliminate all superfluous premises. (Relevance is indicated by the assumption and task associated with the lowermost oval, the test that reads, “Are all of the premises necessary?” The argument is valid, sound, and elegant if one can proceed through the lowermost “Yes” decision node.)

Clearly, acceptable arguments with a conclusion of the form ‘If A then B’ are also possible. A sentence of the form ‘If A then B’ is called a conditional, where A is the antecedent and B is the consequent. Though an argument may or may not conclude with a conditional, it is generally easier to evaluate arguments that do not have a conditional for a conclusion. Therefore, a common practice for evaluating such an argument is:

1. “Translate” the original argument into another argument with a conclusion of some form other than ‘If A then B’. (Note: The technique most frequently used to transform the conditional is to split it into its constituent sentences, treating the antecedent as a new premise and treating the consequent as the new conclusion. Where G is the original set of premises, by showing that B is entailed by G ∪ {A} one thereby shows that “If A then B” is entailed by G alone. The metatheorem establishing this is frequently called the “deduction theorem” and is given by Herbrand 1930.)

2. Once the argument is translated, evaluate it within the framework in Figure 1.

3. Finally, translate the argument back into its original form. Any premise then can be introduced as the antecedent of a new conditional conclusion.

Thus, it is only necessary to develop an organized approach to evaluating and improving arguments with conclusions that are not conditionals.

The Reductio Assumption as a Tool for Testing Validity

The validity of an argument can be examined either directly or indirectly. A direct proof, in which a conclusion is proven directly by a straightforward derivation from the premises, is preferred. However, for cases in which a direct proof is inconvenient (or even impossible), an indirect proof is preferred. An indirect proof is one in which an equivalent argument is substituted for the original, then the substitute argument is proven directly. Ideally, the replacement argument should be easier to prove and should be valid if and only if the original argument is valid. One such method of indirect proof is called “reductio ad absurdum.”

Suppose an argument, A, consists of a set of premises, P = {P₁, . . . , Pₙ}, and ends with the conclusion, C. The steps involved in “proving A by reductio” are:

1. Assume the truth of P₁, . . . , Pₙ.
2. Assume the truth of not-C. (This is called the “reductio assumption”).
3. Derive a contradiction from these two assumptions.
4. Conclude C (i.e., A has been proven valid).

Because not-C is true if and only if C is false, and because a contradiction is impossible, proof by reductio establishes that it is impossible (by step 3 and definitional consequence 3) for the premises of A to be true (by step 1) and the conclusion false (by step 2) simultaneously. Hence, A is valid by definition.

Parallel to proof by reductio is disproof by counterexample. The first two steps are the same as before (i.e., (1) assume P₁, . . . , Pₙ and (2) assume not-C). If, instead of deriving a contradiction, we can find an example that simultaneously satisfies all of the assumptions made in steps 1 and 2, we will have demonstrated irrefutably that the original argument is invalid. Such an example, which illustrates the consistency of {P₁, . . . , Pₙ, not-C}, is called a “counterexample.” The two types of counterexamples most often used are labeled “possible world counterexamples” and “semantic counterexamples.”

Using a possible world counterexample to prove that an argument is invalid requires exercising one’s
imagination. To demonstrate that an argument is invalid, one need only produce a single counterexample. However, the counterexample need not be drawn from reality. A devastating counterexample may be fictional, fantastic, or even bizarre, so long as it is not contradictory. Consider the following argument:

P₁: All people are literate.
P₂: No people are literate.
Therefore,
C₃: No dogs are literate.

At first glance this argument appears valid by virtue of containing a contradiction in the premises. However, we could simply use our imagination to conjure up a universe containing no people at all, but containing one literate dog (thereby making the premises vacuously true). In that universe, (1) all people would be literate, (2) no people would be literate, and (3) some dog would be literate, thus proving that the preceding argument is actually invalid.

If the possible world counterexample approach seems too fanciful, the semantic counterexample approach provides an alternative test for the validity of an argument. In this method, the denotations of the nonlogical terms are altered, then the validity of the resulting argument is examined. For example, assume the nonlogical terms in the previous argument have the following definitions: 'people' denotes currently living dinosaurs, 'literate' denotes the color purple, and 'dogs' denotes flowers. Because there are no currently living dinosaurs, the premises are both true; because there is at least one purple flower, the conclusion is false; hence, the argument is invalid.

Either of these two approaches for examining the validity of an argument through the reductio assumption is perfectly acceptable. It is often unsettling to the nonphilosopher to examine the validity of an argument by assuming that a reasonable conclusion is false, or to use counterexamples requiring an alternative imaginary universe, or to casually alter the meanings of all the argument’s nonlogical terms. However, these approaches need not be so disturbing if one remembers that it is the structure of an argument, and not its specific content, that is being probed.

The Example Article

An article by Elizabeth Hirschman that appeared in the September 1985 Journal of Consumer Research, “Scientific Style and the Conduct of Consumer Research,” is the work selected for partial analysis within the framework outlined. Hirschman extends an article by Mitroff and Kilmann (1978). Their work, which was an attempt to relate differences in personal style to the real practice of science by scientists, was in turn an extension of the theory of personality originally proposed by Jung (1971).

Mitroff and Kilmann attempted to specify a connection between personality and scientific style. In their adaptation of Jung’s typology, individuals differ along two basic dimensions: information acquisition and modes of data processing. The information acquisition continuum is bounded on one end by the “sensation” orientation (details are important) and the other end by the “intuition” orientation (the gestalt is important). The second dimension pertains to the approach used to evaluate a problem. The end points of this continuum are “feeling” orientation (personal values are important) and “thinking” orientation ( impersonal, logic-oriented analysis is important). As these dimensions are theorized to be independent of one another, individuals can be classified into one of four groups: sensing-thinking (S-T), sensing-feeling (S-F), intuiting-feeling (I-F), and intuiting-thinking (I-T).

The categories of scientific styles corresponding to these four groups are the analytical scientist (S-T), particular humanist (S-F), conceptual humanist (I-F), and conceptual theorist (I-T).

The following prima facie plausible argument (A₁) is a succinct statement of what appears to be the central argument in Hirschman’s article.

P₁: There are four acceptable scientific styles available for consumer research, though the style of the “analytical scientist” currently dominates (e.g., p. 227, column 2, lines 6–9; and p. 230, column 1, lines 42–6).

P₂: If we fail to encourage all four scientific styles, we are cutting ourselves off from other, related disciplines (e.g., p. 238, column 2, lines 10–18).

P₃: Cutting ourselves off from the research findings of other disciplines is something that should be avoided (e.g., p. 238, column 2, lines 18–20).

Therefore,
C₁: It is important to encourage current and future consumer researchers to “practice—to actually engage in—research in all four scientific styles” (p. 238, column 2, lines 32–3).

We emphasize at the outset that neither A₁ nor any of the sentences comprising A₁ appear anywhere in Hirschman’s article. A₁ is an argument we perceive as underlying that article. Though we have taken great care to avoid misrepresentation of the article, the reader who is interested in the substantive issues involved

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"Intuition-sensing" in the Hirschman article is clearly a misprint.
may wish to review the original work to evaluate how adequately the constructed argument (A₁) represents it. For our illustrative purposes, however, that is not necessary. The question of whether or not A₁ was actually intended by the author is irrelevant for our primary purpose.

The tools introduced before are used to show the following three points about A₁.

S₁: P₁ lacks justification (and thus, even if valid, the soundness of the argument is in question).

S₂: P₂ is ambiguous between two claims. (If the premises, as subsequently clarified, are interpreted in one way, the argument is unsound; if interpreted the other way, the argument is invalid.)

S₃: The conclusion itself is somewhat ambiguous (so that unless it is suitably clarified, any attempt to reconstruct a valid and sound argument leading to the conclusion will be unsuccessful).

Establishing either S₁ or S₂ would seriously call into question the truth of the article’s major conclusion, C₁. Establishing S₃ would seriously call into question the meaningfulness of this conclusion.

The Lack of Justification for P₁

First, we consider P₁, that there really are four acceptable research styles available to consumer researchers. Most of Hirschman’s article seems to be establishing this claim through the following subargument (A₂).

P₄: According to Mitroff and Kilmann (1978), no style is intrinsically better than another (e.g., p. 226, column 1, lines 28–9).

P₅: Here are four examples of authors illustrating each style (p. 227–37).

P₆: These authors are highly respected and their work is frequently published (e.g., p. 227, column 1, lines 43–9).

Therefore,

C₂: There are four acceptable scientific styles available for consumer research, though the style of the “analytical scientist” currently dominates.

Note that C₂ is identical to P₁.

We use the following mode of addressing subargument A₂. If it can be shown that P₄ through P₆ could all be true, yet C₂ could still be false, A₂ is invalid. We therefore assume the truth of P₄ through P₆ and show merely that it is possible for C₂ to still be false. This does not mean that C₂ is necessarily false, only that the subargument itself does not provide us with any reason to accept the truth of its conclusion. We then suggest an alternative approach to establishing C₂. (Note that this procedure may be related to the uppermost oval in Figure 1, the test that reads, “Is there a contradiction?”.)

Proving Subargument A₂ is Invalid

For the sake of proving that P₄ through P₆ are not sufficient evidence for C₂, let us suppose C₂ is false, that due to some imaginary reason other scientific styles have no place in consumer research. The exact nature of this imaginary reason is irrelevant to the argument, because any possibility we dream up will suffice. (For example, suppose every important issue in consumer research can be addressed by the analytical scientist, and certain issues that are crucial can be addressed adequately only by the analytical scientist. For the purposes of the argument, all that is required is that this count as a “good reason” were it to be true and not that it actually be true.) The claim that a given scientific style is inappropriate for performing a particular task (e.g., producing good consumer research) does not contradict the claim that the style has great intrinsic worth; thus P₄ could still be true. The examples on pages 230–7 of the article are indeed examples of researchers working in styles other than that of the analytical scientist (P₃). The authors are indeed highly respected and their work is frequently published (P₆). (In relation to the previous example, it is claimed that all four consumer researchers produced dissertations “conducted in the analytical science mode,” p. 238, column 1, lines 12–13. Thus, our imaginary example is not inconsistent with the supposition that P₅ and P₆ are true.) Therefore, subargument A₂ is invalid because it is possible for the premises all to be true and the conclusion to be false simultaneously.

Presumably the major selling point for C₂ is that some highly respected authors have gone on to employ “unorthodox” scientific styles successfully after having established themselves within the analytical tradition. However, this reason is far from convincing, especially to readers who are inclined to doubt the value of the works cited precisely because they are not conducted in the analytical scientific mode (and these are the very readers who most need to be convinced). A more promising approach to proving C₂ (to a presumably unsympathetic audience) would be to show that there are many important research problems within consumer research that should be examined, but that many of them cannot be probed adequately by the analytical style. Obviously, the issue of whether or not some style is intrinsically better than another is irrelevant to the consideration of whether
one style is superior for studying a given research problem.

Because they constitute much of the article, the examples easily could be taken as attempts to prove a general claim. Examples can be used to clarify a meaning, to prove existence claims, to disprove a general claim, or to disprove any claim of the form ‘If A then B’ (like the imaginary example used before). However, examples cannot deductively establish a general claim. At best, they can only increase the prima facie plausibility of such a claim. (There are inductive ways of establishing a general claim via a statistically based evaluation of a large number of examples, i.e., data points, but this method clearly is not being invoked here.) Therefore, establishing C2 might have been approached profitably in some other fashion.

Reworking the argument so it could be established by example that a significant number of research problems requiring the other styles are being overlooked would be a significant and interesting contribution to the literature in the field. However, to do so would suggest a complete change of focus in the original article. The issue would no longer be whether certain styles should be promoted or repressed, but whether the current stock of acceptable tools available to consumer researchers is sufficient for examining certain research problems generally acknowledged to be crucial. (This is, coincidentally, the very issue we are raising in our article.)

The Ambiguity of P2

We use the following mode of addressing P2. The original claim on which P2 is based is shown to be too strong (i.e., it entails implausible consequences). Rather than simply rejecting the claim, a first attempt is made to supply a more suitable alternative (viz. P3) to the original claim, one that seems to serve the proper role within A1. (This is indicated in Figure 1 by the path from the uppermost oval, the test that reads, ‘Is there a contradiction?’ through the conclusion and task that follow the ‘No’ decision node.) The apparent success of P3 then is shown to be due entirely to an ambiguity. Even after an attempt to clarify this ambiguity, first with P3a and then P3b, it is seen that the resulting arguments still must fail. (This part of the exercise traces through the uppermost and central ovals in Figure 1.) Note that the purpose of this exercise is simply to outline the path that a constructive philosophical critique might plausibly be expected to take.

Evaluating P2

Hirschman claims that analytical scientists “lack the ability to comprehend and integrate findings from tangential disciplines that primarily utilize these [other] scientific styles” (p. 238, column 2, lines 13–16). This claim, however, is problematic. We typically understand a “finding” to be something expressed only in indicative statements, that is, sentence forms such as ‘Object X has property P’ (or logical transformations of such sentence forms). Yet there is no unusual quality inherent in such statements that would render them inaccessible to researchers confining themselves to one scientific style rather than another. Thus, there is no reason to think that the avoidance of certain styles precludes understanding the results of other disciplines such as “cultural anthropology, humanistic psychology, ethnography, aesthetics, literary criticism, and ethics” (p. 238, column 2, lines 16–18).

Though the original claim is too strong, it does suggest the more plausible claim, P3: “If we fail to encourage all four scientific styles, then we are cutting ourselves off from other, related disciplines.” However, P3 is problematic for the following reason. Exploring disciplines other than consumer behavior is not the same as exploring other “scientific styles” within consumer research, so it is unclear how avoiding one might lead to inability to do the other. The source of this problem is the consideration that other fields (some of which admittedly lean toward other styles) presumably would have their fair share of “analytical scientists.” Therefore, in principle one could borrow extensively from other disciplines and never once step outside the analytical perspective.

In the face of this objection, P3 can be maintained only by supposing there are some disciplines that have absolutely no analytical scientists. Let us make this supposition. Is A1 any stronger? Apparently it is. If (1) there are four ways of conducting research, and if (2) avoiding any of these ways cuts us off from another discipline, and if (3) cutting ourselves off from research findings is undesirable, (4) it would appear that we should not avoid other ways of doing research. The problem with this enhanced argument lies in the connection between cutting ourselves off from other disciplines (point 2) and cutting ourselves off from the research findings of other disciplines (point 3). Therefore, some modification of P3 is required. The argument would be valid if P3 were to be revised as follows (note that this revision is along the same lines as the article’s original claim).

P3a: If we fail to encourage all four scientific styles, we are cutting ourselves off from the findings of other, related disciplines.

P3b: If we fail to encourage all four scientific styles, we are cutting ourselves off from the findings of other, related disciplines.

To show that this argument would be valid, assume that (1) P1, P3a, and P3 are all true and (2) C1 is false (i.e., it is unimportant to encourage current and future consumer researchers to practice research in all four scientific styles). The latter assumption is the reductio assumption, for a reductio ad absurdum (discussed previously). By the reductio assumption, it
is not important to do, to encourage, or to practice in all four styles; by P₂⁺, failing to encourage all four styles cuts us off from the findings of other fields; therefore, the conclusion would be that "findings of other fields must not be important." However, because this conclusion contradicts P₁, it is impossible for P₁, P₂⁺, and P₃ to all be true and C₁ to be false simultaneously. Thus, the argument is valid. Because this version of P₂ is equivalent to the "original claim," which was shown before to be too strong, we now see that A₁ can achieve validity, but only at the cost of soundness.

A more reasonable claim would be that we cut ourselves off from certain methods employed in tangential disciplines by not becoming familiar with other styles. This revised claim is suggested by such passages as those asserting that the consumer researcher "... should be able to understand the processes underlying these alternative modes of inquiry" (p. 238, lines 24–5); "... should each be able to practice—to actually engage in—research in all four scientific styles" (p. 238, lines 31–3); and "could learn (much) about a phenomenon by personally examining it from four points of view" (p. 238, lines 33–5). It is because of such passages that there is some justification for proposing that P₂ be modified as follows.

P₂⁺: If we fail to encourage all four scientific styles, we are cutting ourselves off from the methods of other, related disciplines.

Substituting P₂⁺ for P₂, supposing that P₁ is true (though unjustified), assuming some disciplines have absolutely no analytical scientists, and assuming further that these disciplines have findings relevant to consumer research gives us a collection of sentences P₁, P₂⁺, P₃, and others that still does not entail C₁. This can be seen by considering the fact that exploring methods within other fields is not the same as, nor is it a necessary condition for, exploiting the findings of other fields, that is, there is no connection between P₂⁺ and P₃. For example, a consumer researcher does not need to appreciate the subtleties of FORTRAN to make excellent and confident use of a statistical software package. Theoreticians within science do not need to be comfortable with laboratory techniques and safety procedures to comprehend the results reported in scientific journals. Thus, the connection between P₂ and P₃ that must be present for C₁ to follow does not exist for P₂⁺.

To illustrate another (though unnecessary in this case) check for invalidity, we need merely imagine a possible world in which P₁, P₂⁺, and P₃ are all true, but C₁ is false. In such a world, by P₁, four styles are available for consumer researchers, even though there is a preference for the analytic style; by P₂⁺, anyone who is not encouraged to explore other styles fails to acquire methodologies from other sciences; and by P₃, it is important to have access to the findings of other disciplines. However, if in this imaginary world consumer researchers always consult a minimum of three trustworthy specialists in a given field before they borrow any results from that field, it would not be considered important to encourage consumer researchers to practice—or actually engage in—these other scientific styles. Because this imaginary world is consistent, the argument is invalid. (Note the similarity with reductio ad absurdum; the same hypothesis is made, but no contradiction follows.)

The apparent success of P₂ thus is seen to hinge on an ambiguity. If P₂ is read as P₂⁺, A₁ is valid but unsound, whereas if it is read as P₂⁺, A₁ is invalid even though all the premises are true. Furthermore, if P₂ is read as both P₂⁺ and P₂⁺, A₁ is valid but unsound.

Arguments that appear to work only because of an ambiguity do so because only the favorable aspects of each interpretation are obvious; for example, the argument is valid if the ambiguity is interpreted in one way and has true premises if the ambiguity is interpreted in another way. However, the ambiguity only gives the illusion of a strong argument. The situation is really analogous to choosing between dying a millionaire tomorrow and living 100 years in a coma. The real choice is not between being a millionaire and living 100 years, but between dying and being comatose.

The "Stepladder" Approach

A truly detailed philosophical critique would not stop with P₂, but would continue the preceding dialectic until either the groundwork for a successful argument is developed or the conclusion is shown to be un支持able by any argument. No such effort is developed here, because we are less concerned with the topic than with a method for exploring the topic.

It is a normal feature of philosophical critiques that flawed arguments fail not because one can construct one specific counterexample, but because one can construct a certain type or category of counterexamples. Insight into the nature of the problem is gained through understanding the type or category of counterexample that consistently demonstrates the failure of the argument.

For example, any argument attempting to work from the premises that (1) group X cannot currently accomplish goal A and (2) goal A must be accomplished to the conclusion that members of X must change will always fail. Its failure is guaranteed because one can easily imagine a universe in which there is someone outside group X who can accomplish goal A and is available for consultation.

Even at this early stage of analyzing argument A₁, a certain pattern of imaginary example and counter-
example is starting to emerge. The argument seems vulnerable to considerations of the following sort.

1. The nature of a given research problem could determine the type of scientific style most suitable to its solutions.

2. Because collaborations are possible between specialists in different fields, the problem of bridging the gap between two sciences need not be solved by a single researcher.

These considerations suggest the following new argument, A3.

P7: There are four scientific styles, only one of which is commonly encouraged in consumer research.

P8: There are currently significant, yet unsolved problems in consumer research.

P9: The effort to solve these problems would be facilitated by incorporating viewpoints foreign to consumer researchers operating in the analytical mode.

P10: It is unreasonable to expect one individual to be fully competent in all the scientific styles required to address these currently unsolved problems.

Therefore,

C1: The currently unsolved problems of consumer research should be addressed through a collaborative effort between consumer researchers operating in the analytical mode and scientists who primarily utilize other scientific styles.

P7 could be established by (1) citing Mitroff and Kilmann (1978) and (2) reviewing the consumer behavior literature of the past decade and/or surveying current consumer researchers. P8 could be established by surveying current consumer researchers. P9 could be established only by a case by case examination of the unresolved problems and their potential solutions. The plausibility of P10 is explained in the review of the Jung typology in Appendix A.

**Ambiguity of C1**

The addition of otiose premises to an argument will destroy neither its logic nor the veracity of its conclusion. However, this is not to say that elegance is simply a matter of taste. In conversing with one another, verbally or otherwise, we have expectations about the conventions we and others follow. These conventional conventions have been discussed by philosophers, notably Grice (1957, 1975), Strawson (1964), Searle (1978), and Kates (1980).

The problem with including otiose sentences in an argument is that in doing so one breaks a “rule of conversation” (cf. Grice 1975), namely that one should not mislead by including extraneous information. In normal conversation, the listener assumes that all information given by the speaker is given for a purpose and that it should be taken into account when the listener draws a conclusion on the basis of the speaker’s words. For example, suppose a man stranded on a country road receives the following answer upon asking a passersby the location of the nearest gas station: “There’s one five miles that way, and there’s another 10 miles that way.” If the nearer gas station is closed, the mention of it is true but otiose. More importantly, mentioning the nearer gas station is misleading because normal conversation presumes elegance.

When a speaker seems to violate this rule flagrantly, he or she is presumed to do so for a good reason. For example, if a reviewer were to spend an entire review praising an author’s grammar, this emphasis would be interpreted as a claim that there is nothing else praiseworthy to mention about the article.

The presumption of elegance is operative in arguments as well as in normal conversation. It can lead to serious problems when the conclusion of an argument is either ambiguous or implied and the reader is left to construct his or her own conclusion on the basis of (presumably all) the evidence offered.

Frequently the only conclusion that would make an argument elegant also makes it invalid and the only conclusion that would make an argument valid makes some of the premises otiose. Arguments therefore can be misleading in that they contain certain premises suggesting a strong, interesting, or controversial conclusion, but upon closer examination the only interpretations that retain these suggestive premises in an apparently elegant argument result instead in an invalid argument.

The elegance of an argument is difficult to assess when its conclusion is either ambiguous or not stated expressly. In these instances, the conclusion must either be clarified or supplied by the reader. Because multiple alternative conclusions are often possible, the procedure used to make explicit an implicit conclusion is similar to that used to anchor an ambiguous term. As previously indicated, this procedure can be a tedious one. The required thoroughness dictates examining a reasonably complete list of possibilities, considering each one as though it were “the” conclusion, and determining the status of the resulting argument. Each alternative conclusion produces a different argument with different strengths and weaknesses. The best alternative is the one that yields a valid, sound, and elegant argument.

One can easily misinterpret the results of this procedure as unfair because it seems to “put words into
the author’s mouth.” However, it is precisely because none of the alternative conclusions are indicated expressly in the original article that an effort must be made to reduce ambiguity and bring real “power” to the originally ambiguous or implied conclusion. A truly powerful argument is hoped to arise from the effort. If it does not, the original conclusion was of only apparent significance.

We use the following mode of examining the conclusion of A1. First, we explain why C1 has textual justification and prima facie plausibility. Second, we show that C1 will not stand as stated, because it needs disambiguation. Third, we propose several possible alternatives of varying degrees of plausibility and consider two likely ones in terms of the strength or weakness they lend to the resulting argument.

Some of the alternatives clearly may not be what the author intended, but are nevertheless instructive to consider in our attempt to analyze the argument objectively. Strict adherence to the “spirit” of the original is not always the best approach to analysis. Subtle features of truth functional relations between premises and conclusion may be overlooked if one’s choices of potential conclusions are limited in any such arbitrary way.

**Examining Placeholder (C1) and Other Alternative Conclusions**

Perhaps no single sentence in the original Hirschman article can be taken as the conclusion. For purposes of exposition, we use C1 as a placeholder for whatever conclusion will eventually emerge. We offer C1 as a reasonable version of the article’s conclusion. The elements comprising this conclusion are found in various places throughout the article. It is claimed in the abstract that an argument is given for “mutual acceptance of different ways of conducting research.” (Presumably this means “mutual acceptance by consumer researchers of different ways of conducting consumer research.”) There seems to be an emphasis on allowing individual researchers to pursue different scientific styles closely allied with their own personality. There is even a suggestion that every consumer researcher ideally should be able to engage in all four types of research (p. 238, last paragraph, first sentence) even though, as indicated in Appendix A, this is theoretically impossible. The overall impression given by the article is that not every researcher can be so versatile but, as some can, it is important to offer them whatever encouragement is possible.

At first glance C1, the claim that it is in the best interest of consumer researchers to encourage other scientific styles, appears perfectly plausible and interesting. However, under closer examination, many questions arise about who is to be encouraged (e.g., doctoral students, current consumer researchers) and how strongly.

Let us first consider questions about doctoral students. Is every future consumer researcher to be trained to “think” in all four scientific styles while still a graduate student? (A very strong interpretation.) Perhaps just two or three styles would be sufficient. Should doctoral students be permitted to pick a single style on the basis of personal preference? (An opposite, but equally strong interpretation.) Perhaps doctoral students should not be actively discouraged from pursuing another research style, though competence in the analytical style should remain a minimum requirement. (A very weak interpretation.) Perhaps doctoral students should be screened for their ability to operate in other research modes, with those capable of doing so trained in the individually matched appropriate scientific styles.

Now let us consider questions about current consumer researchers. Is every author of a consumer research article expected to exhibit proficiency in all four styles—for instance, by explaining an article in four different scientific modes as a prerequisite for publication? (A very strong interpretation.) Are the journal reviewers for any article submitted in consumer research to include only scientists proficient in the style of the author? Should a publication quota of different scientific styles be established, thereby promoting more article submissions representing alternative styles? Should collaboration among specialists in the different disciplines be encouraged by publishers, perhaps by requiring interdisciplinary authorship for all works that borrow from other fields rather than simply requiring a literature review or strong bibliography?

As the preceding questions indicate an abundance of possibilities, we consider only two of them. The reader can verify that there is not nearly enough argumentation to establish any of the strong conclusions (invalid) and there is far too much argumentation given to establish the very weak ones (lack of elegance). First, however, we need to resolve the issues raised in preceding sections by stating a revised set of premises. Let us suppose, purely for the sake of example, that our new set consists of the following premises.

**P11:** Certain research topics or tasks in consumer research demand adoption of scientific styles other than that of the analytical scientist.

**P12:** Exploring these topics or performing these tasks would be facilitated by adopting methods used in other fields.

**P13:** There are no analytical scientists in these other fields, that is, the methodologies of these fields are closed to the analytical scientist.
$P_{14}$: All consumer researchers whose work has been published are capable of conducting research as analytical scientists.

$P_{15}$: These tasks and/or topics will be addressed.

Now let us consider two possible conclusions.

$C_{4a}$: Some analytical scientists will become proficient in other research styles.

$C_{4b}$: Some analytical scientists will collaborate with scientists using other styles.

(Notice that the more natural conclusion, "If these tasks . . . will be addressed, then some analytical scientists will become proficient . . . " is a conditional conclusion and so is broken into $P_{15}$ and $C_{4a}$.) Clearly, $C_{4a}$ cannot be the conclusion of a valid argument if collaborations among researchers are possible and $C_{4b}$ cannot be the conclusion of a valid argument if single individuals can become sufficiently versatile to practice other scientific styles.

The conflict can be resolved in three ways.

1. Find additional premises suggesting why collaborations are not feasible.

2. Find additional premises suggesting that individuals cannot achieve the necessary degree of versatility.

3. Propose $C_{4c}$.

$C_{4c}$: Some analytical scientists will become proficient in other research styles or some analytical scientists will collaborate with scientists who utilize other research styles.

Let argument $A_4$ be the string of sentences $P_{11}$ through $P_{14}$ and $C_{4c}$. $A_4$ can be shown to be valid by trying to imagine under what circumstances $P_{11}$ through $P_{14}$ could all be true, yet $C_{4c}$ false. $C_{4c}$ is false only under one condition: no individual analytic scientist will ever learn another style or collaborate. Upon reflection, it is clear that any such condition would be precluded by one of the premises, so the argument is valid. Given that the resulting argument is valid, establishing the truth of each premise is the next problem. Intuitively, the truth of $P_{15}$ appears the most difficult to establish.

**Concluding Comments**

Marketers have yet to embrace the techniques for critically evaluating argument-centered works. We propose and illustrate the analytical tools of the logician for evaluating these works. We critique only one article because no attempt is made to resolve issues in any specific theoretical area in marketing. Rather, our purpose is to illustrate some basic philosophical tools relevant to evaluating and improving argument-centered works in marketing.

Specifically, we introduce and exemplify in the article:

1. Precise definitions of the crucial terms "valid," "sound," and "elegant."

2. Proof by the argument form *reductio ad absurdum*. Illustrations also are provided in which execution of this argument form is complemented by possible world counterexamples and semantic counterexamples.

3. The usefulness of clarifying ambiguities and explicitly formulating complete arguments where necessary.

4. The usefulness of constructing a variety of counterexamples so as to provoke the emergence of a *typical* counterexample, thus gaining insight into the underlying weaknesses of an argument.

5. The notion of a "stepladder" approach to constructing an improved argument from a problematic one.

What is to be gained by adopting the logician’s techniques for evaluating argument-centered works? Confusion about the evaluation criteria used by journal reviewers certainly would be reduced. For the individual researcher, the result would be stronger articles immune to criticism due to such confusion. For the discipline, adhering to these evaluative criteria should yield stronger theoretical works on which to base subsequent stronger and better focused empirical tests. Clearly, acquiring this analytical capability is worth the required effort.

How does the marketing discipline acquire these skills? Curiously, the answer to this question can be found in our discussion of argument $A_4$. The two alternatives raised there are (1) training within the discipline and (2) collaboration with authors outside the discipline.

The first alternative is to train ourselves to evaluate work in this way, either with self-training for current researchers or formal training of Ph.D. candidates. Acquiring these skills should prove as valuable as acquiring quantitative methods skills in honing researcher capabilities. Should one elect to develop these skills, one should keep in mind that their effective use is aided by the acquisition of a philosophical attitude and the exercise of philosophical insight. With a proper philosophical attitude one can approach that peculiar sort of objectivity necessary to switch back and forth between argument and counterargument in
the “stepladder” approach typical of constructive critiques. With proper philosophical insight one can be reasonably confident that the details one elects to investigate are the important ones (e.g., the weakest links in the chain of an argument).

However, these two habits of thought are not easily acquired and it would be unreasonable to expect anyone to devote years to the study of philosophy solely for the sake of an improved argument or two. A good approach is to engage frequently in the activity of doing philosophy in a practical vein. This does not mean to read the so-called “classics of Western thought.” As a general rule, the classics are interesting and stimulating documents, but they only provide examples of argumentation acceptable in a bygone era. Such information may be misleading rather than informative. A more instructive venture would be to struggle through any well-conceived topical anthology of recent philosophical articles (no more than 20 years old) on some issue tangentially related to the marketer’s specialization. These recent, workaday articles get right to the heart of philosophy as it is done today, and that is what one should concentrate upon. Philosophy is not a stable body of literature, but an ongoing activity; it is not a collection of established facts, but an increasingly refined consensus as to what constitutes good argumentation and, more importantly, what does not. Tapping into this consensus in whatever way we can, through collaborations or through individual training, could not hurt, but could only help in the standardization of evaluative methods within marketing and the social sciences in general.

The second, more immediately effective alternative is for logicians to be added as journal reviewers and as coauthors. Our article, for example, is a result of just such a collaboration. Future collaborative work between marketers and logicians could be geared to establishing specific facts about current marketing theory. Some possibilities are:

1. Marketers may be prone to certain types of logical fallacies. If so, this tendency could be determined through a review of the argumentation in a randomly selected sample of high quality argument-centered articles. A subsequent “short course” in logic then could be developed on the basis of the specific needs of marketers.

2. Meta-analyses have proven useful in evaluating bodies of empirical research. The inconsistencies between the premises and conclusions of the argument-centered works in specific topic areas might be rectified via an analysis of the arguments contained in those works.

3. Various theories from related fields have been accepted by marketers. These theories need to be examined for logical consistency with each other to avoid the hidden contradictions that might threaten subsequent ability to build strong marketing theory.

**Appendix A**

**Jung’s Typology**

Jung’s original typology arose from a frequent need in counseling situations to “make husband and wife plausible to one another” (Jung 1971, p. 533). By explaining his theory to an entire family, Jung sought to give each member a fresh and perhaps more insightful perspective into other family members and the sources of their misunderstandings. The theory was not brought forth as an objective explanation of the behaviors of his patients, but rather as a didactic tool, used to promote mutual acceptance among all family members. Thus, the “theory” proposed by Jung was to aid his patients “operationalize” their therapy.

Jung presented his character theory to the community of psychologists not as a new conceptualization for understanding patients, but as a metapsychological solution to the apparently unsolvable conflict between the psychological theories of Freud, Adler, and others (Jung 1965, p. 207). In other words, rather than argue the relative merits of Freud’s and Adler’s theories, Jung explained each one’s seeming theoretical conflict with the other as a product of the differences between the two men’s psychological types. Jung thus hoped to ameliorate their debate, which had become very dogmatic and antagonistic.

Therefore, Jung’s theory was not intended to explain the behavior of a patient to a psychologist in the way the theory of gravity explains the behavior of a falling stone to a physicist. Instead, to use his theory of types properly was to apply it to increase one’s understanding of one’s own strengths, weaknesses, and conflicts with others.

There is a considerable difference, however, between dissolving emotional conflicts between people by explaining one person’s personality type to the other and recommending that each person actively adopt the personality type of the other. In fact, according to Jung, actually attaining equal proficiency in all four types is impossible in practice. Because each scientific style proposed by Mitroff and Kilmann (1978) requires full command of two “adjacent” personality types, and because no one person can have mastery of all four types, no one person could operate comfortably within any pair of scientific styles comprising all four personality types. That is, it would be impossible for any one person to operate as both an analytical scientist and a conceptual humanist, or as both a conceptual theorist and a particular humanist.
Appendix B
Recommended Additional Reading

Standard Logic
The Copi text is the most often used for an introduction to symbolic logic. In several respects Lemmon’s exposition is superior, though his use of “sound” to mean “valid” is confusing and idiosyncratic. The Lemmon text contains an excellent natural deductive system. Mendelson’s book is not recommended for any but the advanced reader. The use of “trees” by Jeffrey and Hodges is a clever method of evaluating arguments. Both books are well worth reading.

Lemmon, E. J. (1965), Beginning Logic. Great Britain: Thomas Nelson and Sons, Ltd.

Beyond Standard Logic
What are formal language systems? What are their scopes? What are their limits? These readings provide some insight into the ongoing logical investigations into language and thought.

Haack, Susan (1978), Philosophy of Logics. Cambridge, UK: Cambridge University Press. (On p. 253 of this book is some excellent advice to the reader interested in pursuing any of the topics discussed here.)

Knowledge Acquisition
Formal logics are not the only ways of justifying a knowledge claim. The nature of justification is examined in the following works; they contain some of the most important articles on the topic published in the twentieth century.


Philosophy and Argumentation
Why do philosophers do what they do and why does it look so strange to us? These books and articles introduce the reader to the bizarre but entertaining world of philosophical argumentation. The Hofstadter and the Nozick books are more like a guided tour wherein the reader is taken along certain paths of thought, whereas Toulmin and Hacking concentrate more on objective, expository presentations of the evolution of philosophical argumentation. Wilson’s book, geared for the intelligent nonphilosopher, is an introductory textbook on how to think philosophically about anything.


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