

THE DISPLACEMENT OF CONCEPTS: EARLY EVOLUTION OF THE MACHINE METAPHOR IN THE FUNCTIONAL SCHOOL OF MARKETING¹

D.G. Brian Jones
University of Prince Edward Island

ABSTRACT

This paper is concerned with the evolution of significant concepts and theories in marketing and the role which metaphor plays in that evolution. An historical framework for metaphor-based theory development termed the "displacement of concepts" is used to describe the emergence and elaboration of the machine metaphor as a concept for marketing functions.

INTRODUCTION

At the turn of this century a few scholars were beginning to conceptualize the idea of marketing. One of the earliest streams of thought quickly came to be known as the functional approach or school, so named because of its focus on the activities or functions associated with marketing. What follows is an examination of the early development of the functional school of thought and the role played by the machine metaphor in that evolution.

The paper begins with a discussion of the nature of metaphor - the various types of metaphor and their status in the evolution of theory. There follows a summary of Schon's (1963) metaphor-based model of theory evolution termed the "displacement of concepts". That framework is then used as a backdrop for an analysis of the machine metaphor in early contributions to the functional school of thought. Seminal publications by Shaw (1912), Weld (1917), and Cherington (1920) are examined for their use of "machine" as a concept for marketing. In a larger sense, though, what is being proposed here is a new kind of inquiry - an intellectual history which goes beyond the manifest content of theories to examine their underlying metaphors and to develop an account of the patterns of interaction and change in metaphor and theory.

ON THE NATURE OF METAPHOR

The essence of metaphor is to understand one thing in terms of another. Metaphors rely on creating a constructive falsehood as a means of liberating the imagination so that we can think of familiar ideas in new ways or in order to conceptualize new ideas. The two concepts, one familiar (e.g. machine) and the other not (e.g. marketing), which join in a metaphor cannot be literally the same or the metaphor would have no purpose. Neither can the two concepts be completely different or the metaphor would be absurd.

Different types and various typologies of metaphor have been suggested by linguists, philosophers, and social scientists including marketing scholars. One common theme is that there are different levels of metaphor corresponding to their relative complexity (Brown 1977; Hunt and Menon 1995; Van den Bulte 1994). At one extreme metaphors are simple, specific, and common in our thinking and language. In that connection they are used to embellish, to vividly portray something, or to illustrate an idea. A deeper level of understanding is provided by theoretical or theory-constitutive metaphors. Such metaphors are used to express theoretical claims for which no adequate literal phrase is known. Even more complex, though, is a small group of metaphors which provides the very foundations of schools of thought and research traditions. Brown (1977) compares these so-called root metaphors with Kuhn's notion of a paradigm.

¹ The author acknowledges financial support from the Social Sciences and Humanities Council of Canada and the research assistance of Susan Gallant.

Root metaphors are those sets of assumptions, usually implicit, about what sorts of things make up the world, how they act, how they hang together and, usually by implication, how they may be known. As such, root metaphors constitute the ultimate presuppositions or frame of reference for discourse on the world or on any domain within it (p.125).

Thus, from root metaphors we can derive models or theoretical metaphors which, in turn, spawn illustrative metaphors. Root metaphors play a valuable and special role in science and the development of new ideas. They act as historical markers for important conceptual and theoretical innovations because they provide fundamental assumptions about the ontology, methodology, and even the value system of a new school of thought (Hunt and Menon 1995).

Clearly an important epistemological issue centers on the specific metaphors we use to develop our thinking. Brown (1977) has identified five root metaphors which have played important roles in the development of social science during the past couple of centuries: organism, machine, language, games, and drama. The machine metaphor has provided the basis for behaviorist theory in psychology, for refinements of functionalist theory in sociology, and for the so-called instrumental man in economic theory. Not surprisingly, the machine has also been one of the metaphors of choice in 20th century business thinking (Schon 1963), organizational behavior (Morgan 1980), and marketing thought (Arndt 1985; Rosenberg 1984).

The notion of "machine" in its metaphorical role is derived from Newtonian mechanics. In mechanics the future path of a moving body can be predicted and its past disclosed if its present condition and the forces acting on it are known. Thus, for example, the future paths of all planets can be foreseen. The active forces are Newton's gravitational forces depending on distance alone. The great results of classical mechanics suggest that the mechanical view can be consistently applied to all branches of physics, that all phenomena can be explained by the action of forces representing either attraction or repulsion depending only upon distance and acting between unchangeable particles (Einstein and Infeld 1938, quoted in Schon 1963, p.143).

Thus, the machine came to be understood as something which helped 'man' put matter into motion. That essence of the machine - a mechanism for putting matter into motion - has been extended into many fields of human thought (Brown 1977).

As a root metaphor, "machine" carries with it the following assumptions: (1) measurability - phenomena are observable and quantifiable; (2) determinism - phenomena act upon one another in a chain of causes and effects and do so in a predictable manner; (3) causal atomism - the chain of causes and effects is one of discrete, sequential events; and (4) phenomena normally operate under conditions of balance, equilibrium, and efficiency. The analysis presented herein focuses on the machine as a root, theoretical, and illustrative metaphor for the functional school of marketing. But first, we look more closely at the process of metaphorical thinking.

THE DISPLACEMENT OF CONCEPTS

Schon (1963) refers to the process of thinking metaphorically as a "displacement of concepts" because the formation of new concepts involves the extension, or displacement, of old concepts to new situations. Essentially, many new concepts grow from the making, elaboration, and correction of metaphors. Schon identifies 4 aspects of this displacement of concepts: transposition, interpretation, correction, and spelling out. These aspects of displacement are not discrete events following one another in sequence, but rather, can occur out of sequence and are sometimes overlapping. Nevertheless, by focusing attention on the significant events and actors associated with each, they provide a basis for beginning a study of the process of metaphorical thinking in the evolution of theory. More specifically, by examining the assumptions an old concept brings to the new, we can identify the important differences between old and new concepts, potential errors in interpretation of new in terms of the old, and corrections (or lack thereof), in order to identify potential

weaknesses of past or current theories. More generally, this sort of inquiry can help us to better understand the process of theory development.

Although there may be no strict sequencing of steps in the displacement of concepts, one aspect of the process clearly occurs first - transposition of an old concept to a new situation. This involves the initial attempt to apply a familiar concept to a situation for which no suitable concept exists. Usually (and this is especially so for theory development) complex concepts or metaphors (especially root metaphors) include a cluster of concepts or ideas which must be elaborated over time. For example, the machine metaphor includes such concepts as mechanism, motion, force, efficiency, balance, friction, and so on. Thus, the transposition of a metaphor can go on almost indefinitely as more and more elements of the old concept or metaphor are applied to the new situation.

In that ongoing elaboration of a metaphor, transposition overlaps what Schon calls interpretation, which is the assignment of specific elements of a familiar concept to specific elements of the new situation. Of course, we cannot transpose a familiar concept to a new situation without assigning it to specific elements of the new situation. Nonetheless, it is useful to distinguish between these two aspects of displacement.

The new situation and the old concept are not literally the same and, therefore, certain elements of the old concept will not apply to the new situation. That is, some applications of a metaphor to a new situation will create errors requiring correction, an adjustment or adaptation of the new concept-structured situation. This aspect of the displacement of concepts may require an explicit critique of the old concept or it may simply involve a series of implicit adjustments.

Finally, as the elaboration of the metaphor continues there is a more formal working out of specific areas of similarity and difference known as spelling out. In the development of science this usually involves theorizing.

Arch W. Shaw, L.D.H. Weld, and Paul T. Cherington are generally recognized as the earliest contributors to the functional theory of marketing (Fullbrook 1940; Hunt and Goolsby 1988; Ryan 1935; Sheth, Gardner and Garrett 1988; Vanderblue 1921). The following section describes the early displacement of the machine concept to marketing by examining the seminal contributions of each of these marketing scholars.

DISPLACEMENT OF THE MACHINE CONCEPT TO MARKETING

Arch W. Shaw - Some Problems in Market Distribution (1912)

In 1949 Arch W. Shaw was among the first individuals to receive the prestigious Paul D. Converse Award for outstanding contribution to marketing theory. The award was presented in recognition of Shaw's (1912) article "Some Problems in Market Distribution" published in the Quarterly Journal of Economics and again in 1915 as a book under the full title Some Problems in Market Distribution - Illustrating the application of A Basic Philosophy of Business. In presenting the award, Converse remarked that Shaw's "concept of marketing functions was one of the greatest single contributions to the early development of science in marketing" and that it "may be compared with the use of the atomic theory in the analysis of chemical reactions" (1951, p.32). McGarry prophesized in 1953 that future historians would date the birth of marketing theory to Shaw's work - and indeed, many have (Copeland 1958; Hunt and Goolsby 1988; Sheth, Gardner and Garrett 1988).

Although Shaw is generally recognized as the father of the functional school of thought, only Converse, in comparing it to atomic theory, seemed to explicitly recognize the machine-metaphorical nature of Shaw's thinking. Shaw proposed a seminal and enduring conception of marketing, describing it as "the

application of motion to material" (1915, p.5)². This he borrowed directly from a definition of production by the nineteenth century economist Eugen von Bohm-Bawerk (1891), although others such as John Stuart Mill, Richard T. Ely and Alfred Marshall had also defined production in this way and had considered marketing to be part of production (Dixon 1990). It is also clear, at least in Bohm-Bawerk's (1891) work, that "putting objects in motion" was a very mechanistic concept of economic production.

If we look more closely at the way in which man assists natural processes, we find that his sole but ample contribution consists in the moving of things. 'Putting objects in motion' is the idea which gives the key to all human production and its results (pp.12 - 13)... Often, of course, we are not able directly to master the form of matter on which the friendly power [nature's power] depends, but in the same way as we would like it to help us, do we help ourselves against it; we try to secure the alliance of a second natural power [the machine] which brings the form of matter that bears the first power under our control... the wedge and hammer, the axe, the gouge... their assistance gives us the [wooden] rhones; then the rhones bring us the water (p.21).

It was that conception of production which Shaw cited in his definition of marketing as the application of motion to material (1915, p.6).

Shaw believed that it was time to start developing a body of marketing theory. That would require, he believed, a "simple, unifying concept or principle" by which the activities of market distribution could be classified (1950). The concept he proposed was the "application of motion to material" and the significance of that idea to his subsequent discussion is suggested in the following.

I do not wish to exaggerate the importance of this simple and apparently obvious idea, but for me it has opened a way to locate the activities of business and disclose the relations between them. It serves not alone as a key to a classification of these activities and a method of approach to the problems arising out of their relations but also as a thing of every-day use. For the final function of this classification is to locate those motions that are purposeless and further the conservation of energy by making their elimination possible (1915, p.6).

Thus, in his formal definition of marketing as the application of motion to material we can see Shaw's use of the machine concept as a theoretical metaphor. Implicitly, if not explicitly, he recognized that it would be necessary to use metaphor and analogy in order to explain his conception of marketing when he added in a footnote.

Business men and economists, though dealing with the same forces and the same phenomena do not always agree on terminology.... In the following pages the language of the business man is used, though it has been necessary occasionally to find new phrases [emphasis added] to characterize the re-grouping of activities which has been attempted (ibid.,p.8).

In this way Shaw transposed the machine concept to marketing in order to begin the process of developing an understanding of what was then a relatively new idea. A more thorough examination of the discussion of marketing by 19th century economists might conclude that they be given credit for the transposition of the machine metaphor to marketing. Nevertheless, Shaw's role in that connection is more immediately recognizable.

Shaw also began the interpretation of marketing as machine by identifying 5 basic motions (functions) of marketing: (1) sharing risk, (2) transporting goods, (3) financing operations, (4) selling (communicating ideas about goods), and (5) assembling, assorting, and re-shipping (ibid., p.76). Then, throughout his book

² Throughout his book Shaw used the terms "motion", "activity", and "function" interchangeably.

Shaw explained those functions using the machine as an illustrative metaphor. For example, his discussion of the selling function included the following.

The ratio of cost, quality, and service observed in the actual manufacture of a product, for example, must be the same as that put forward by the sales force. Otherwise, customer dissatisfaction will follow, internal friction will develop, and efficiency, good will and profits will all suffer [emphasis added] (ibid., p.10).

In discussing the "marketing problem" (the apparent high costs of distribution) and its then-popular solution (the elimination of the middleman), Shaw described the latter as "shortening the cycle of distribution", or "reducing the chain [emphases added] as a means of simplifying the production-distribution equation" (ibid., pp.19-20). This reorganization of the "costly and awkward machinery of distribution" was necessary, Shaw concluded, because "the consumer pays for lost motions in distribution" (ibid., p.44).

Shaw also divided the middleman functions into sub-groups - those of physical supply and those of demand creation. The latter group created an interesting problem for his mechanistic theory of marketing. The functions of demand creation involved intangible concepts of human behavior such as ideas about goods, the desire for them, and the willingness to pay a price and make an effort to secure them (ibid., p.11). Shaw asked the reader for a "mental adjustment" to the concept that "ideas about goods are truly materials of demand creation", adding that

there is a close analogy between the materials of demand creation and factory materials - to both of which motion must be applied in order to render them effective. Ideas about the goods can be handled as definite things, almost as tangible as raw stock. The results they produce can be measured with a fair degree of accuracy - particularly in advertising, where the personality of a salesman does not enter to confuse the issue. This means that the sales value of each idea can be tested, that different arrangements of the same ideas can be compared and that the relative efficiency of the agencies employed for their transmission can be determined... [In short] ideas about the goods can be treated as the materials of demand creation [emphasis added] (ibid., p.13).

Here, Shaw runs directly into the falsehood of his metaphor. His interpretation of the machine metaphor in this instance requires a "mental adjustment" because it does not truly apply in this instance. He extended the machine metaphor too far when he conceptualized the intangible entities of demand and demand creation in tangible or material terms. Non-mechanistic elements of marketing were thus reified (made into concrete things) by Shaw and, in the process, distorted images of real demand and demand creation were presented.³

Shaw's mechanistic theory of marketing didn't end with the machinery of distribution. The marketing machine and machinery of production were only parts of a larger "machinery of business" (ibid., p.11). Business, in turn, also had to be concerned with the moderating influences of "community machinery" (p.32) and the "machinery of government... including legislative, judicial, and administrative machinery in motion" (p.35). All of these machines operated under the "universal application of the principles of balance and of interdependence" (p.39) and, thus, Shaw's marketing system was complete... a clockwork mechanism of separate parts - all working together under immutable laws.

Shaw was also influenced by the Scientific Management movement which focused attention on the accuracy and efficiency of machines and machine-like processes.⁴ Throughout Some Problems in Market

³ The process of reification and its implications for marketing philosophy are more fully discussed by Monieson (1989).

⁴ In 1900 Shaw started publication of a magazine, System, which was noteworthy for its emphasis on the ideas and ideals of Scientific Management. In 1911 he also wrote an article for the Review of Reviews entitled "Scientific Management in Business" which clearly stated his belief in applying the principles of Scientific Management to marketing.

Distribution Shaw writes about the need in marketing for efficiency and standardization, two of the hallmarks of Scientific Management. Most importantly, though, Shaw borrowed from Scientific Management a methodology and value system which were based on the machine root metaphor. He advocated a "laboratory study of distribution" which he likened to the methodology of an engineer.

The engineer does not choose material for a bridge by building the bridge of the material and waiting to see whether it stands. He first tests the material in the laboratory. That is what the business man must do (ibid., p.110).

Shaw then invoked behaviorism (a mechanistic theory of psychology) in an example of the laboratory study of the effectiveness of direct mail advertising.

In direct advertising, the mailing of selling letters, circulars or catalogues to prospective purchasers to draw from them an order for goods as evidence of awakened demand, you have a stimulus and response adapted to direct statistical measurement. The number of responses per thousand communications can be determined... under what are equivalent to laboratory conditions (ibid., p.111).

For his definition of marketing as the application of motion to material, Arch W. Shaw should be credited for the transposition of the machine metaphor to the study of marketing. His description of the basic middleman functions was an attempt to begin the process of interpreting marketing in terms of the machine metaphor. Of course, there were errors in that interpretation. The task remained for subsequent contributors to the functional school to elaborate the displacement of the machine concept.

L.D.H. Weld - "Marketing Functions and Mercantile Organization" (1917)

Weld did not claim to invent the functional theory of marketing. In fact he explicitly acknowledged that his contribution in that connection was derived from Shaw's work (1917, p.306). Weld added 2 functions to those proposed by Shaw - storing and buying (the latter he termed "assembling" and distinguished it from Shaw's "assembling, assorting, and re-shipping"), but felt that this greater specialization of functions might be unique to agricultural marketing.

Weld was less concerned with developing a theory of marketing functions than with describing them "in a way that will couple them up with the actual organization of the marketing process" (1917, p.306) and distinguishing the basic marketing functions for agricultural products from those required for the marketing of manufactured products. In other words, his priority was to illustrate the basic functions as they applied specifically to agricultural marketing. This was true, not only in his "Marketing Functions and Mercantile Organization", published in The American Economic Review (1917) and for which he is most closely associated with the functional school, but also in The Marketing of Farm Products published in 1916.

An analysis of Weld's writing indicates little explicit metaphorical content. He did make direct reference to the machine metaphor when he wrote, "a classification of marketing functions is absolutely fundamental to a study of and an understanding of the marketing machinery [emphasis added]" (1917, p.306), but there are few illustrative metaphors following that statement. Indeed, in the preface to his book on marketing farm products, Weld used "organism" as a metaphor for marketing when he wrote, "The author has attempted to describe the marketing organism [emphasis added] as it is" (1916, p.v). Yet he returned to the machine concept when he concluded that changes in the division of functions among middlemen have occurred "without causing much friction" (p.20), when he referred to the efficiency of the "marketing machinery" (p.40), and when he listed as one of the functions of middlemen, "to furnish the business machinery [emphasis added]"

which is essential to proper accounting for huge quantities of goods of great aggregate value" (p.62).⁵

These examples, then, provide only tentative support for L.D.H. Weld's use of the machine as a metaphor for marketing. If we conclude that to be the case, however, then Weld's major role in the displacement of concepts was to add to Shaw's work some interpretation of the machine metaphor, first by adding 2 functions, and also by illustrating the nature of basic functions (motions) in agricultural marketing (machine). There is no evidence that Weld recognized any errors in the extension of the machine concept to marketing or that any corresponding corrections to the machine metaphor were suggested by him.

If Weld's conceptual and theoretical contributions to the functional school, and by association his role in the displacement of the machine concept to marketing, are modest, perhaps an explanation can be found in his education and background. Unlike Shaw, Weld had a thoroughly formal education, earning his Ph.D. in economics from Columbia in 1908. Though his objective was similar to Shaw's - to study marketing scientifically - Weld had had enough formal education to cleanse him of any tendency to think openly in metaphorical terms. That was not the case for Paul T. Cherington.

Paul T. Cherington - The Elements of Marketing (1920)

Most reviews and histories of the functional school include Cherington's work among the earliest. However, relatively little has been written beyond that about Cherington's distinctive contribution to marketing functions. A few scholars note that Cherington's work was an expansion of that by Shaw and Weld. Fullbrook (1940) pointed out that Cherington, more so than Shaw and Weld, stressed in his analysis the separation of functions from functionaries (channel intermediaries). Yet while Cherington may have added little to the functional content of the theory, his work was the most explicit and extensive of the early contributions in using the machine as an illustrative metaphor for marketing. To his predecessors' lists Cherington added only one new function - grading - however, he classified the marketing functions, diagrammed them as parts of the marketing machine, and illustrated them in numerous and vividly mechanistic ways.

In The Elements of Marketing Cherington uses "elements" as a synonym for "functions". His stated purpose was to "present a simple statement of the problems of marketing by functions" (1920, p.v). He organized the functions into three groups: (1) merchandising functions (assembling, grading, storing, moving), (2) auxiliary functions (banking & credit, assumption of risk), and (3) the selling function. In addition to these, Cherington asserted that the fundamental task (function) of marketing was to bring together buyer and seller in a trading mood. A comparison with the functions proposed by Shaw and Weld suggests that the only new functions here were grading and, possibly, the bringing of buyer and seller together, although the latter might be interpreted as implicit in the work of his predecessors.

Cherington distinguished between marketing prior to the industrial revolution, which he termed "elementary" marketing, and the "elaborate" marketing of the early twentieth century. The latter was distinctive, he wrote, because of its complexity and related tendency towards indirect channels of distribution. This modern, more "elaborate" marketing constituted, in Cherington's words, "a mechanism between producer and consumer" (ibid., chap.2). His entire book can subsequently be read as a detailed description of the marketing machine that operated between producers and consumers - a mechanism or machine linking producers with consumers through a series of "devices" (functionaries) which performed various "functions" to ensure that the essential work of modern market distribution was carried out efficiently. In that simple description of the marketing mechanism lies Cherington's theoretical metaphor.

That these functions and functionaries were the motions and devices of the marketing machine was made clear when Cherington diagrammed the system shown in Figure 1. He described it in the following way.

⁵ Interestingly, "organism" may simply have served for Weld as an 'evolved' form of the machine metaphor. The overlap between those two metaphors has been suggested by Polanyi (1962, p.359), who described "organism" as "living machinery", and by Jacob (1976, chap. 1) who described them as interchangeable metaphors for visible structures.

This diagram merely shows the operation of the assembling function which is but one of the four merchandise functions in the process of performance. Each of these separate functions will be discussed at length in subsequent chapters. But in that discussion this question of the functionaries and their place in the distributing process will make it necessary to have in mind some idea of the inter-relations between the parts of this mechanism (p.32).... The retailer, and indeed the whole mechanism for supplying merchandise for retail sale, is a device for performing certain recognizable functions (p.44).

FIGURE 1

Interlocking Devices or Functionaries in the Marketing Mechanism

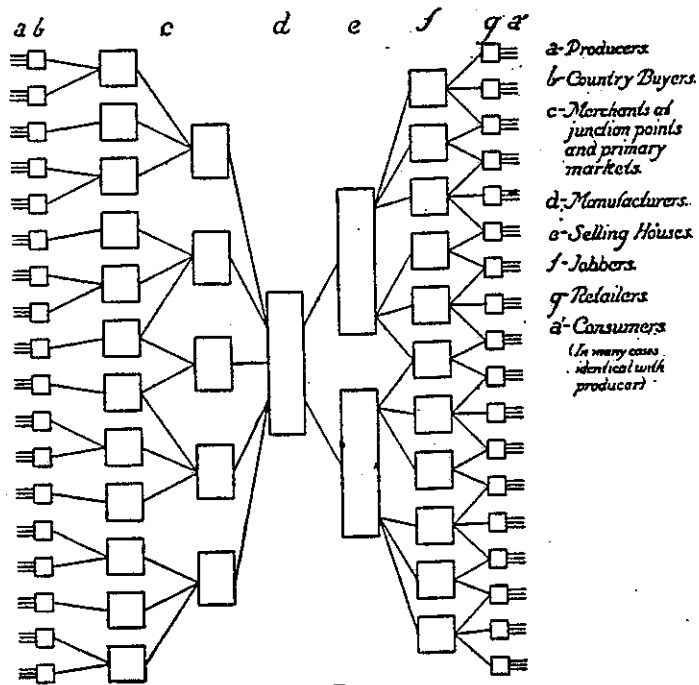


FIG. 1

"Successive Commercial Steps in the Movement of a Commodity from Producer to Consumer"
 Source: Paul T. Cherington (1920), The Elements of Marketing, p.31.

In that illustration are graphic assumptions of causal atomism, determinism, and symmetry. And throughout the rest of Cherington's book, the various elements of the diagram, especially the functionaries and functions, are illustrated using the machine metaphor.

Table 1 lists the various machine-based concepts used in Cherington's book and the number of times each was used over the 224 pages of his text. A conservative estimate shows no fewer than 17 different machine-based concepts used a total of some 382 times. This illustration is not intended so much to provide a rigorous, quantitative analysis but, rather, to dramatize in the short space available here the extent to which Cherington elaborated the interpretation of marketing in terms of the machine metaphor. Each of the concepts listed was used in a metaphor to illustrate some part of the marketing mechanism.

TABLE 1

Machine Concepts in Cherington's (1920) The Elements of Marketing

<u>Concepts - Occurrences:</u>		<u>Concepts - Occurrences:</u>	
Mechanism	87	Power	11
Mechanical	4	Energy	1
Machinery	3	Force	6
		Inertia	3
Device(s)	44	Efficiency	17
		Waste	11
Cycle(s)	3		
		Balance	6
Chain	34	Counterbalance	1
System	50	Process	90
		Operation	11

TABLE 2

Devices in the Marketing Mechanism

functionary	advertising	retailer(ing)
wholesaler(ing)	branding	trade-mark
broker	commission house	merchant
banker	underwriter	auction
futures trading facility	lease & royalties contract	department store
rapid transit system	sales contract	supply house
commercial credit		

Source: Cherington's (1920) The Elements of Marketing

For example, Cherington clearly envisioned the various parts of the marketing machine as "devices". Functionaries, or middlemen, were the most obvious example, but several other concepts were also referred to as devices, as listed in Table 2. From this we can see that Cherington had more than just channel members in mind when he described the marketing mechanism. He also included various types of contractual agreements, branding, and advertising. But these were described by Cherington as "merely the most conspicuous devices" (p.50) and it is easy enough to imagine many more such components in the marketing machine.

The philosophical assumptions of the root machine metaphor, although less obvious, were also part of Cherington's thinking. In addition to his diagram of the marketing mechanism referred to above, in his preface he writes that "marketing in the aspects here treated is of the nature of an applied science", but then adds "there has been an avoidance [in the book], perhaps too scrupulous, of the terminology of the science" (p.v). Measurement and balance were also themes that went hand in hand with Cherington's description of the marketing functions. Each function was discussed in terms of the adjustment it provided to the marketing mechanism. For example, assembling provided adjustments of quantity, grading provided adjustments of quality, storage... of time, transportation... of place, and so on. Of course, these adjustments were conceived as observable and, hence, measurable, and the purpose of each adjustment was to maintain the balance between supply and demand. Cherington further noted that when the marketing mechanism was in a state of equilibrium the functionaries would remain unchanged, but that instability and conflict could develop, in which case the functionaries often changed form.

The retailer, and indeed the whole mechanism for supplying merchandise for retail sale, is a device for performing certain recognizable functions... the services in each case are essential and permanent so long as the conditions of production and consumption remain essentially unchanged (p.44)... In discussing the relation between the functions of marketing and the forms which have been developed for conducting them, it is noteworthy that in all three classes practically every phase of the distributing mechanism is in a state of constant conflict and instability... New forms of mechanism are emerging (p.55).

It isn't clear which state Cherington believed was normal - equilibrium or disequilibrium, but his description of those conditions as they existed in marketing was clearly rooted in the machine metaphor.

Because of his extensive use of illustrative machine metaphors, we can perhaps think of Cherington as the great early interpreter of the machine metaphor for the functional school. As for the potential sources of his choice of the machine as a metaphor, Cherington was less explicit than was Arch W. Shaw. With little speculation, however, one might infer sources for Cherington similar to Shaw's. Cherington studied for his B.A. and M.A. in economics at the University of Pennsylvania, thus sharing with both Shaw and Weld an indirect influence from the German Historical School of economics, notable for its inductive-statistical version of positivism as a philosophy of economic science.⁶ That was a philosophy very consistent with the machine root metaphor. Cherington went on to teach at the Harvard Business School with Shaw and was also significantly influenced by the ideas of Scientific Management (e.g. Cherington 1940). Finally, Cherington brought to his scholarly career, experience as an editor and publisher, and alternated between his academic life of teaching and writing and his business life of consulting. These were also similar to Shaw's experiences.

CONCLUSIONS

The historical analysis presented here is admittedly incomplete. A more complete study of the evolution of the machine metaphor in marketing would yield additional insights into the weaknesses as well as strengths of functional theory. We should look beyond the 1920 work of Cherington to subsequent developments in the functional school. For example, if we skip ahead to some of the later critical reviews of

⁶ *Harvard, Columbia, and Pennsylvania were 3 of the most significant American centers of influence by the German Historical School (Jones and Monieson 1990, p.104). Shaw studied and taught at Harvard. Cherington studied at Pennsylvania and taught at Harvard. Weld completed his Ph.D. at Columbia.*

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⁶ Harvard, Columbia, and Pennsylvania were 3 of the most significant American centers of influence by the German Historical School (Jones and Monieson 1990, p.104). Shaw studied and taught at Harvard. Cherington studied at Pennsylvania and taught at Harvard. Weld completed his Ph.D. at Columbia.

the functional school, we find some evidence of the metaphor-related problems that were becoming apparent. Those criticisms clearly indicated the need for corrections.

For example, the uncertainty associated with the terminology and meaning of "functions" was raised in 1935 by Ryan and again in 1940 by Fullbrook. We have seen in this paper that the earliest contributors to the functional school used several terms as synonyms for "function" - terms such as motion, activity, element, and task. Ryan warned that it was necessary to be clear about the precise meaning of the word "function" if it was to serve as the focus of our understanding of marketing. Moreover, although his was an explicit critique of the language of functional theory, it did not specifically address the machine-as-metaphor for marketing functions. The first in that connection may have been McGarry.

In 1950 McGarry wrote a retrospective about the functional school hinting strongly at the mechanistic overtones of the functional approach and its corresponding inability to deal with irrational and intangible qualities of consumer demand.

[According to the functional school] marketing is simply a bundle of activities in the flow of goods, and a marketing function is any one of the bigger activities in the bundle. One might readily draw the analogy of a wheel in a machine. The activity of the wheel consists, of course, in turning around and around. This, then, is its function; and the machine itself may be defined as a lot of wheels going around and around. Clearly this defines the machine in a primitive sort of way, and it may conceivably be of aid in some types of analysis; but it is questionable that it leads to any profound understanding (p.266).... Demand for products... is largely made from a complex of rational and irrational, tangible and intangible factors, many of which are imponderable and impossible to define.... What the consumer wants or may be induced to want is often impossible to define in terms of physical characteristics (p.275).

McGarry correctly concluded that "marketing is something more than a machine (ibid., p.279). His was probably the first attempt at correction through a direct critique of the displacement of the machine metaphor to marketing.

The machine metaphor served a constructive purpose in the early development of marketing theory. However, in dominating marketing thought unchecked for so long, its errors and conservative effects may have seriously limited the further development of marketing theory. For example, the politics implicit with the "game" metaphor may have enlightened channel theory; the "drama" metaphor could have focused more attention on the actors and human element in marketing; and the "language" metaphor has certainly informed our understanding of the meaning and symbolism in buyer behavior. Hopefully the analysis begun in this paper will encourage other historians to identify and examine other metaphors in the history of marketing thought.

Metaphors are food for thought. They bring life to language. But they can also be the death of meaning, if abused. Metaphor plays an essential role in theory development, but it is a role which must be carefully directed. There is an undeniably conservative role played by the displacement of concepts. Because it deals with new situations by maintaining as much as possible of the old, our understanding of new situations is rooted in old ways of understanding.

The hierarchical structure of metaphor presented at the outset of this paper suggests that the really significant metaphors in the history of our thought development carry with them clusters of concepts and assumptions, not all of which can or should be applied to new situations. If we begin to develop a history of ideas which examines their underlying metaphors, we can peel back some layers of meaning, achieving a deeper understanding of our theories and a better appreciation of their errors.

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