Cybernetics and Consumer Behaviour: An Exploration of Theory of Messages

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ABSTRACT
Dr. Stuart Umpleby of the George Washington University claims that circularity is at the heart of cybernetics [8]. This same characteristic is also at the heart of business, particularly in marketing and especially in the study of consumer behaviour. This paper attempts to map marketing concepts, particularly those of communication, to cybernetics, particularly second-order cybernetics, where the principles are applied to organizations and societies as well as to machines. It will use Norbert Wiener’s seminal work on cybernetics and society [8], Chris Miles’ [4] article on Cybernetics and Advertising, and a textbook on principles of consumer behaviour [5].

Keywords: cybernetics, marketing, advertising communications, consumer behaviour, feedback

1. INTRODUCTION: TERMS AND THEORIES
Cybernetics can be defined most simply as the intersection of machines and human beings. Wiener describes the word cybernetics, which he is credited with inventing, as derived “from the Greek word kubernetes, or ‘steersman’, the same Greek word form which we eventually derive our word ‘governor’” [8]. First-order cybernetics was the cybernetics of observed systems. Second-order cybernetics is the cybernetics of observing systems. Second-order cybernetics took up the theory of social systems, the theory of interactions between organization and society; we came to see the role of ideas in a changing social system and we came to regard the observer as important [7]. Wiener added social systems to the pool, focusing on form and pattern rather than substance. He defined cybernetics as “the science of control and communication in animals, machines, and social systems” [8]. It is this definition that this paper will use for the term.

Wiener further added, “Since the end of World War II, I have been working on the many ramifications of the theory of messages. Besides the electrical engineering theory of the transmission of messages, there is a larger field which includes not only the study of language but the study of messages as a means of controlling machinery and society” [8]. Wiener in fact refers to cybernetics as “the theory of messages” [8].

The “control of machinery and society” is an important concept in the study of technology and society. We cannot separate technology and society. Even the invention of the arrowhead and spear as early technology meant that early humankind had to be able to communicate and strategize as it changed the way they hunted in groups [1]. We can envision, in advertising communication, the communication process as technology and customers as society. If marketers are going to control consumers, that is, convince consumers to buy their product, they will need to communicate and strategize and they do this using the principles of good marketing.

The Marketing Concept is a theory of marketing which became popular in the middle of the last century to explain a new way of conceptualizing the selling of products. Prior to the 1960s, marketing was seen essentially as meaning sales. It came out of the production concept whereby an organization made what it wanted to sell and people bought it because there was no other choice. Later marketing moved to the Selling Model where the company
employed especially talented people, salesmen, to sell the product to the customer. I deliberately do not genderize; it was almost all men selling in those days and the model of sales was a salesman, someone who learned all about the product, its benefits and advantages, and took it out on the road and sold it. This worked well as long as there was barely enough supply to meet demand. After the second World War, however, America found its many factories that had been geared up for war production to be in need of something to do in peacetime. As companies produced more and more product, it became necessary to think in different ways about selling the product, since people had more choice. Thus was conceived the Marketing Concept – the idea that all areas of the firm would work together in order to produce and sell a product that met the needs of the consumer, at a profit to the firm.

As intellectual disciplines, second-order cybernetics and marketing came into being reasonably close to each other, in the middle of the last century. While first-order cybernetics had dealt mainly with biological systems and “man (sic) and machines”, second-order cybernetics would extend the discipline to the study of human systems, including organizations. The Marketing Concept makes reference to this system, encouraging the entirety of the organization to work together to meet the needs of its customers at a profit to the organization. Both disciplines are characterized by an intense interest in and dependency on communication, and yet a search of the literature revealed only one major article [4] linking the study of the human beings who make up a marketing firm and its customers – the study of consumer behaviour – to cybernetics.

Norbert Wiener’s first book was titled simply Cybernetics, and had as its target audience those working in the field and familiar with Wiener’s terminology and ideas. His second work, which forms the centerpiece of this paper, broadened the concept to its current emphasis on human beings as part of the communications equation and answered the demand for a book that would bring cybernetics to a level to be comprehended by the “lay public”. Wiener’s work focused on the “theory of messages” [8].

Consumer behaviour is the branch of marketing that explores the role of the human being in marketing’s communications process, its “theory of messages” as it were, as encapsulated in the concept of consumer response to advertising. Consumer behaviour attempts to bring light to the so-called “Black Box” of marketing, what goes on in the head of the consumer approaching a buying decision of which we have little understanding. A large part of consumer behaviour deals with messages and communications, and has produced the communications model, the attempt of marketing scholars to decipher the codes that impel a customer to move from the reading of an advertisement to the purchase of a good or service. In a sense, marketing and cybernetics can be seen as evolving from the same kind of thinking at around the same time. Both have at their core an examination of messages and their effect on human beings.

2. THE LAW OF REQUISITE VARIETY

The first law of cybernetics is Ross Ashby’s Law of Requisite Variety. Conceived in the early 1950s, this law states that “the amount of appropriate selection that can be performed is limited by the amount of information available” [2]. The need for information is at the base of all modern organizations involved in marketing a product of any kind. Of Borden’s Four Ps of marketing, one of the models of marketing [3], it is the crucial term Promotion. One must have a Product (good or service), it must be available (Place), it must be sold at a Price that will attract buyers, and perhaps most important, the company needs to do Promotion to inform consumers of the availability of the product and information about it. How the consumer then processes the information provided is the main subject of the study of Consumer behaviour. Consumer behaviour is all about variety and choice. When supply began to outstrip demand, marketing increased and changed in order to, among other things, find out why consumers bought what they bought. How consumers went about choosing the products they purchased had everything to do with the
variety presented in the market. In order to make the right purchases, consumers needed information about those products, and hence came Advertising and other forms of Promotion.

3. FEEDBACK AND THE MARKETING CONCEPT

Cybernetics is about feedback and circularity in models. It is a major term in Wiener’s works, “a method of controlling a system by reinserting into it the results of its past performance” [8]. It also is at the heart of marketing models. The Marketing Concept, which came into practice in the middle of the last century, dictates three pillars upon which good marketing is built:

*The Whole Firm Works Together to Meet the Needs of the Consumer At a Profit to the Organization*

These ideas, seemingly simplistic now in the twenty-first century, came at a time when in too many organizations information was carefully guarded in separate parts of the organization. An organization with separate cost centres would make this separation even more appealing. As organizations began, however, to examine the role of information in successful marketing, they found that in order for the organization to function more effectively, information needed to be available to all parts and areas of the organization. In order to know what the needs of the consumer are, information must pass from consumers to organizations. In the earning of a profit, information must be available to keep track of what is selling and what is not, of what works to increase sales and what does not. This is said with the understanding that it is generally accepted in marketing that we cannot link “successful” advertising directly to sales. Umpleby says that “we like trivial systems, controlled and predictable” [8]. The Marketing Concept, while not including the entirety of marketing, does a moderately good job of providing us with a relatively simple model in which we have some control over the first and third items (encouraging the whole firm to work together and knowing what makes for a profit in any situation) and less control over knowing exactly what will make the consumer happy.

Adapting the words of Neil Wiener, “…control of a [n organization] on the basis of its actual performance rather than its expected performance is known as feedback” [8]. This feedback of information is supposed to control the natural tendency of any system or organization toward entropy. “…[J]ust as entropy is a measure of disorder, so information is a measure of order” [8].

We know when the organization is successfully working together by virtue of the feedback that management receives from different parts of the organization. Things run more smoothly when everyone knows what everyone else is doing. An organization, in Wiener’s words, “will tend to dally longer in those modes of activity in which the different parts work together, according to more or less meaningful pattern” [8]. Feedback from production, sales, and accounting and from places of sale provides information on profit and loss. And feedback from consumers helps us approximate what will make them happy the next time.

It is important that upper management understand that feedback must come from those closest to what is happening and must flow both ways. “It follows that administrative officials, whether of a government or a university or a corporation, should take part in a two-way stream of communication, and not merely in one descending from the top”. [8].

4. FEEDBACK AND THE COMMUNICATIONS MODEL

Feedback plays a major role in consumer behaviour models, especially the Communications Model. It is important to heed Wiener’s warning that “…it is not the quantity of information sent that is important for action, but rather the quantity of information which can penetrate into a communication and storage apparatus sufficiently to serve as the trigger for action” [8]. Ultimately the marketer is concerned with the behaviour of consumers, not just what they say they will buy or how much they may like a particular advertisement.
Wiener's insight on language also fits the emphasis on the behaviour of consumers, "There is a third level of communication, which represents a translation partly from the semantic level and partly from the earlier phonetic level. This is the translation of the experiences of the individual, whether conscious or unconscious, into actions which may be observed externally. We may call this the behaviour level of language" [8]. "The fundamental idea of communication", Wiener claims, "is that of the transmission of message..." [8]

Message plays a major role in the study of consumer behaviour. Indeed it is at the centre of the traditional model of communications, from the Frankfort School, and a circular model (see Figure 1):

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Feedback

Consumer

Consumer

Organization  Message  Medium  Consumer

Consumer

Consumer

Consumer

Consumer

Figure 1 The Frankfort School Model of Communications [5]
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In this model, consumers are seen as relatively passive recipients of information from marketers, with the message central to the model. There is some feedback from the consumer to the organization, which provides the circularity, but the main focus is on the message communicated from the organization to the consumer. The Uses and Gratification Theory which came later, moved us on to a model whereby the consumer interacts much more with the medium, as happens with the Internet for example, but the message still remains central to the process. In fact, much of all marketing centres around the message, from knowing what to put into an advertisement to describe a product to knowing how best to send out words that will convince the consumer s/he needs the product.

“We are,” Wiener says, “immersed in a life in which the world as a whole obeys the second law of thermodynamics: confusion increases and order decreases”. [8]. It is communication that provides a way to handle the “forces of confusion” [8]. The many and varied models of marketing all provide further ways to handle this confusion. The more we can put into a model that can be drawn, the closer we are to understanding the process and Wiener claims that “information is more a matter of process than of storage” [8]. Wiener speaks of there being no reason why machines “may not resemble human beings in representing pockets of decreasing entropy in a framework in which the large entropy tends to increase” [8]. We can think of the pursuit of market niches as following this same pattern – the marketer looks for groups of human beings in the market who will all want something similar to meet a need (core product), be willing to pay more for an actual product which meets this need, and will enjoy, and therefore keep purchasing, a product which has valuable augmentation.

5. CYBERNETICS AND THE COMMUNICATIONS MODEL

The Communications Model, coming to us out of consumer behaviour, deals with how information is handled between the advertiser and the consumer. Miles cites Stern’s Revised
Communication Model for Advertising (1994) which, despite its attempt to be all-inclusive, “is
deficient in a complete depiction of the
interactive relationships between core elements
of the advertising message production process”
[6]. These deficiencies can be handled, Miles
argues, by the addition of cybernetics to the
problem, building “on Stern’s advances and
fully address[ing] the complex character of
interactivity and the implications of the
phenomenal increase in message production by
a multiplicity of consumer audiences” [4]. Miles
thus envisions advertising “as an observing
system”, that is, adding second-order
cybernetics to the simpler feedback loops,
which come to us out of first-order cybernetics,
where the item of interest is an observed
system [4].

All of this makes cybernetics ideal for studying
relationships and effects in considering how
consumers react to advertising. In Miles’ words,
“Cybernetics is distinguishable from goal-
predicated theories of psychology, behavioural
theories of learning and information theory in
that it seeks to elucidate the processes by
which goals or reference states are reached by
systems” [4]. We see again Wiener’s insistence
that information is a matter of process rather
than storage. He cites Jay Forrester’s note that
“feedback processes govern all growth,
fluctuation, and decay…[and are] the
fundamental basis for all change [4].

There are other areas where cybernetics may
contribute to our greater understanding of the
communications process in advertising. Miles
goes on to elucidate how eigenforms, attempts
at “fixing or stabilizing continually evolving
processes”, are different in the model of
advertising communications, tending to be
“fixed in a more particular way” [4]. He also
discusses the use of reference signals (first-
order) and their relationship to the fixed
eigenforms of cybernetics. He arrives at a
model where interactivity is central to the
advertising process, not just provided to the
consumer by the advertiser. This has important
ramifications for Internet marketing, where
consumers expect to find interactivity.

Miles adds feedback loops throughout the
model, which connect every part of the model
with every other part, indicating the amount of
interactivity that is going on. In addition, he
adds an additional player to the system, the
sponsor whom the ad agency has as a client.
He furthermore separates the role of the actual
consumer from the tested consumer, pointing
out the role of cybernetics in “making explicit
the consequences of testing in the advertising
communication system” [4], and indicates with
lines of control how the actual consumer is
today regarded as a co-creator of the message.
This has important ramifications for Internet
marketing where the consumer assume s/he
has more input into the process.

6. CONCLUSION

In the final consideration, it is all about
information and how we model its movement,
whether it be in following the lines of
relationship within the Marketing Concept, or in
a system of advertising communications.
Cybernetics gives us the tools with which to
model exchange of information, or
communication, as it is practiced in marketing.
This exchange is always circular, and that
circularity is much more prevalent than previous
models have shown it to be. Miles provides a
model that indicates how cybernetics can help
us understand more about marketing, and
advertising communications in particular.

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