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The Origins, Evolution, and Contemporary
Applications of Schema Theory

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INTRODUCTION

In his famous book, *Public Opinion*, Lippmann (1922) expressed his regret for the public's inability to process information thoroughly and objectively. "The world inside our heads," however, is as integral to our existence as the earth, water, and sky that comprise our physical surroundings. Such is the state of a world in which the "enormous diversity of nature and the demands on our limited cognitive resources necessitate the use of abstractions in our attempts to simplify that world" (Williams, 1994). These abstractions, or "stereotypes" (as Lippmann called them), are created on the basis of past experiences and are then organized into concepts. Without these concepts we would not be able to remember that drinking five martinis on our lunch break will affect our work (and employment status); or not be able to recognize a horse by seeing only its head, inquisitively protruding from a barn window. These may seem like rudimentary examples, however, they clearly illustrate the indispensable personal need for the recollection of past experiences -- even if these experiences are based on second-hand information. Concepts "categorize and represent general properties, and in doing so facilitate thought and action based on those abstract representations" (Williams).

Within the context of schema theory, concepts represent a compromise between efficiency and informativeness and operate within three categories: lower-level categories, which are rich in detail (more informative) but demonstrate lower efficiency (more time to process); higher-level categories, which are less informative but demonstrate higher efficiency;

and basic-level categories which strike an optimum balance between the two variables. Schemata are generally classified as higher-level categories. These quick and automatically activating mechanisms provide “abstract representations of complex events” (Williams, 1994). In other words, while we may be able to recognize the horse as a horse simply by seeing its head, we don’t need to consciously remember the physical details of every horse we’ve ever seen -- we only need to have a stored concept of what a horse looks like. And this is not to say that concepts are limited to concrete objects. They can also include activities, scenes, and experiences. This cognitive ordering of memories and their effect on decoding information provide the basic foundation for schema theory. The theory’s title -- a term used tentatively in psychology as far back as 1787 -- is meant to symbolize a dynamic framework of processing channels, “and being a framework it can be clothed and shaped according to the requirements of the subject’s cognitions and needs” (Paul, 1967).

In this exploration, I will first review the origins of schema theory and then discuss its evolution and its relationship with mass communication research. I will then show how it has been used recently as a practical theory by consumer researchers, using various studies as examples. Finally, I will offer a brief conclusion.

ORIGINS

Bartlett (1932) introduced schema theory to the psychological community in the early part of the twentieth century when he published a series of studies he had done on memory. In doing so, he was able to show that interactions between existing knowledge and new information created distortions within the latter. In a particularly revealing

study, he had twenty test subjects (representing a wide range of professional and cultural backgrounds) read a short Native American folk tale. After the reading, he tested their recall of the story by having them reproduce (rewrite) the text from memory. These reproductions took place at various intervals (from 15 minutes to 6 years) after the reading. Because the story was representative of a social environment completely foreign to all the test subjects, he anticipated a wide range of interpretations. Among other things, Bartlett was interested in how the more educated and sophisticated subjects would react to the relatively simplistic and disjointed grammatical style of the story; and how subjects with religious backgrounds would respond to certain spiritual references.

The study revealed what would later be defined as three cognitive recollection effects: “flattening,” or the omission of certain details; “sharpening,” or the elaboration of certain details; and “rationalization,” or the transformation of details in order to create a more consonant relationship with a subject’s existing biases and experiences. It should also be noted that, in certain cases, flattening and/or sharpening each contributed to the transformation process of rationalization. Upon completion of the study, Bartlett made the following key discoveries:

- (1) Once the the first reproduction was completed, all subsequent reproductions followed the same general form and outline; and details of the story which were subject to one of the three recollection effects remained constant throughout subsequent reproductions. This demonstrated the rigidity of each subject’s interpretive orientation (or schema).

- (2) When a detail correlated with a subject's existing interest and proved itself to be salient, it was often transformed but also retained a high degree of clarity throughout the series of reproductions. It also moved progressively forward within the order of the story's events.
- (3) In general, rationalization was present in almost all of the reproductions and often utilized fabricated details if buttressing was needed to support and ensure consonance.

Bartlett's (1932) study thus provided a new perspective on message reception and a theory that past experiences could not only guide the cognitive process, but also modify the message.

EVOLUTION

Over the years, numerous studies on schemata continued to strengthen Bartlett's (1932) findings regarding the presence of abstraction, rationalization, and influential salience in interpretation. Other effects and functions were also discovered and labeled (Williams, 1994). These included "prediction" which refers to the process by which schemata help people foresee the outcome and details of future events; a "hierarchy" of types of events or objects, sorted by level of complexity (such as a *party schema* vs. a *Christmas party schema* vs. a *company Christmas party schema*); and the "tuning" (reinforcement), "restructuring," and "replacement" of existing schemata.

Schema theory was being used for various topics such as visualization, rhetorical content, and socialization; and the origins of people's schemata were being attributed to

many different sources including mediated information, as well as information acquired through interpersonal contact. Bachen, McLoughlin, and Garcia (1999) tested Bem's (1981) gender schema theory by examining college student's behavioral expectations of male and female teachers. Through both qualitative and quantitative analysis, they were able to show that these expectations supported Bem's conclusions that males are generally perceived as decisive, deliberate, and controlling; and that females are generally perceived as nurturing, understanding, and sensitive. As in all studies, however, there were exceptions that could be attributed to individual experience -- showing that schemata are as unique as the people they belong to.

An adaptation of schema theory, and one that would provide a link to mass communication science, was the theory of "scripts" by Shank and Abelson (1977, cited in Williams, 1994). Scripts capture general information about recurring events and are sometimes referred to as "event schemata." Bower, Black, and Turner (1979, cited in Williams) supported this theory by having test subjects read a story that had been constructed (by means of a pre-test questionnaire) using rhetorical content that depicted familiar events. The writer intentionally omitted certain elements that one would expect to find in a typical episode being described. When asked if non-existent sentences relating to the omissions had been present in the story, the majority of the test subjects claimed that, indeed, they had been present. This empirically proven phenomena, while striking, basically echoed Bartlett's (1932) earlier conclusion that a schema will provide missing information as a means of rationalization.

Schema theory now posed a serious dilemma to communication professionals. If research findings were correct, it showed that “during processing, information may acquire distinct slants that make it more or less accurate” (Graber, 1984, cited in Severin & Tankard, 2001). Another close relative of schema theory is the encoding method known as “priming.” Within the realm of mass communication -- and journalism, in particular -- priming is used to condition a receiver prior to the introduction of new information. Schema theorists such as Ausubel (1968, cited in Williams, 1994) had described this action as providing a schema where one does not already exist -- often in the form of, what he called, an “advance organizer.” Such action gives the subject a “perspective provided in advance of reading, (which) has durable effects on recall” (Williams).

CONSUMER SCHEMATA

As new concepts of message decoding began to take hold in the scientific community, it became evident that in a “cognitively diverse world, the message that is sent is not necessarily the message that is received” (Leonard & Strauss, 1997, cited in LaBarbera, Weingard, & Yorkston, 1998). This fundamental, yet imposing, revelation prompted the application of schema theory within the field of consumer research.

In his study on sport sponsorship advertising, McDaniel (1999) searched for evidence that a pre-existing schema (such as that of a sports fan) could be activated to create positive brand and ad attitudes. While largely inconclusive (partially due to deficiencies in the methodology), the study did make one interesting discovery: ad attitudes seemed to be significantly higher when the advertisement was placed in a sports magazine. This

suggested that information had to be put in a larger context that offered congruency to the overall message -- otherwise, the schema would flatten the message as a means of rationalization. In a similar study, Schmidt and Hitchon (1999) examined the issue of congruency in ads which aligned a commercial enterprise with a social issue or charity. They found that congruent alignments (such as a pet supply store and an animal shelter) produced more favorable brand and ad attitudes than incongruent alignments.

In a demonstration of high-level (schema) versus low-level (detail-intensive) processing categories, Yoon (1997) addressed the notion that younger adults and older adults are cognitively more active during the evening and morning, respectively. Her study showed that younger adults actually maintain the detail-intensive processing strategy throughout the entire day. By contrast (and more predictably), older adults seem to engage in low-level processing (at times, very acute) in the morning and high-level processing in the evening. It should be noted that this study excluded a wide range of age groups between the younger (18 to 22) and older (65 to 79) adult classifications, however, the findings suggest a critical consideration for advertisers (such as time slots for television and radio commercials) when trying to market products to the elderly.

If schema theory exemplifies a “nurture” effect, than Jung’s (1923/1971, cited by LaBarbera et al., 1998) personality-type theory may exemplify a “nature” effect. In a brief detraction from the current topic, it should prove useful to note some striking comparisons between the two. LaBarbera et al. found that the ad attitudes and purchase intentions of consumers both increase when advertising imagery is consistent with their

personality type. In this case, their subjects (after taking a pre-test) were categorized as either “intuitive” or “sensory” (literal minded). The authors supported their hypothesis that intuitive subjects respond more favorably to images that are imaginative, while sensory subjects respond more favorably to images which offer direct meaning. In a sense, this vicariously supports schema theory by re-emphasizing the need for a congruent relationship between the message and the cognitive processing style of the receiver -- suggesting that a customized advertisement “may be more successful than a one-size-fits-all advertisement” (LaBarbera et al.).

Consumer schema research has also extended to topics concerning the emerging influence of the internet on society. Rossiter and Bellman (1999) suggest that the interactive component of websites requires new methods of communication. Unlike television advertising, the sender can no longer autocratically control the sequence of events taking place. The authors posit that web navigation ability differs dramatically among people with varied degrees of “surfing” experience, and that this variable constitutes a type of schema which can have a dramatic effect on the reception of messages. As a secondary consideration, it may also be important to examine the current trend by many established companies (such as clothing stores, magazines, and financial institutions) of adding a “presence” on the web. If loyal customers have developed a schema for a company, it may be reasonable to presume that a congruent web presence (facilitated by similar design elements and “feel”) will reinforce that schema, where an incongruent web presence may cripple a favorable corporate identity (positive brand attitude). Lastly, with commercial

websites becoming more sophisticated (both in look and in functionality), a standard is being set for anyone wishing to do business on the internet. This is especially true today, as the internet is often where a new company makes its first impression.

CONCLUSION

In many ways, Bartlett's (1932) schema theory is more of a catalyst for other theories than an end unto itself. We have seen how it can be convincingly applied to varied, as well as practical, situations. It should be noted that Bartlett's research predated the trend of cognitive science and was initially confronted with the resistance and skepticism of his peers. Today, however, it would seem absurd to doubt the notion that, in some way, our past experiences influence our future judgements. It may not, though, seem so absurd to doubt the notion that our cognitive processing strategies can be created, manipulated, and replaced by a second party -- no matter what the intentions are. This uncertainty, compounded by the assumption that we each carry a unique set of schemata, poses a significant challenge for mass communication researchers. Nonetheless, Bartlett helped revolutionize social science and, subsequently, propagated (directly and indirectly) modern reception theories and effects such as priming and scripting; as well as (arguably) inoculation, expectancy value, and framing. Such a theory certainly seems deserving of continued and closer attention within the realm of mass communication science.

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