

Visual Persuasion: Mental Imagery Processing and Emotional Experiences

Abstract: In a visual and persuasive advertising context researchers should explore the effect of process-generated experiential responses on judgements. Regarding this, the present paper considers an experiential processing strategy that requires elaborated cognitions. Specifically a Mental Imagery Processing model is discussed in order to explain the relation between information processing, emotional experience, and cognitive appraisal. Research hypotheses are formulated regarding two modes of information processing (enactive versus nonenactive imagery) and two kinds of emotion information (stimulus versus response information). Predictions are made about the intensity of consumers' feelings and appraisals.

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Introduction

Recently, Meyers-Levy and Malaviya (1999) provided an integrative framework of judgement formation and persuasion. The framework assumes that, when exposed to an advertisement, people use either a fairly effortful and deliberative “systematic” approach to judgement formation or a far less demanding and less rigorous “heuristic” approach. Furthermore, there is an “experiential processing strategy”. When this third strategy operates, judgements are not based on thoughts prompted by a message content per se but rather on sensations or feelings prompted by the very act of processing (Strack, 1992). Judgements that are based on these sensations may require only the most meager level of cognitive resources, as suggested by experiential processing having been demonstrated most frequently in conditions in which cognitive capacity is severely constrained. Other research, however, indicates that the effect of process-generated experiential responses on judgments need not be limited to severely resource-constrained conditions (Meyers-Levy and Malaviya, 1999). Regarding this, the present paper considers an experiential processing strategy that requires elaborated cognitions.

According to Aylwin (1990), adults can use three different, though interconnected forms of mental representation: verbal representation, or inner speech; visual imagery, or ‘pictures in the mind’s eye’; and enactive imagery, a kind of imagined action or role play. Enactive imagery is specialized for representing the temporal and affective aspects of a stimulus. This is consistent with Lang’s (1984; 1994) work, which shows that representations involving active participation are accompanied by more affective arousal than purely visual representations. In general, emotion research indicates that dimensions of affective valence (i.e., pleasantness or quality), arousal (i.e., intensity or impact) and, to a lesser extent,

dominance are consistently found to organize judgements for stimuli as diverse as words, pictures, mood states, advertisements, and more (Bradley, 1994). In this context more research is needed to explain how process-generated experience influences judgement. The present paper regards the relation between information processing, emotional experience and appraisal. In particular a Mental Imagery Processing (MIP) model will be discussed (see Goossens, 1994)

Research issue

MacInnis and Price (1987), distinguish two different modes of information processing, namely: discursive (symbolic, linguistic or verbal) information processing, which means proceeding by reasoning and argument, and imagery processing, which includes perceptual or sensory representations in working memory that are used in much the same way as perceptions of external stimuli. Basically, imagery processes are evoked as sensory experiences in working memory. It is important to note that elaborated imagery and discursive processing are in actual fact not mutually exclusive processes (Bugelski, 1983). This means that when consumers in 'real' contexts engage in imagery, it is quite likely that discursive and imagery processing and the contents of each become elaborately intertwined. Apart from that, the information processing system is mainly verbal, and language is the standard medium for the elicitation of imagery (Staats and Lohr, 1979). Because of this knowledge, the MIP-model tries to meet realistic situations, in which pure discursive (verbal) and pure imagery (visual) processes do not exist. To simplify matters, two empirical situations of information processing will be distinguished: (1) nonenactive-imagery, that is, situations in which subjects process verbal and visual information, but rather detached. In fact, these subjects just read, or listen to, and look at the presented stimuli. (2) enactive imagery, that is, situations in which subjects process verbal and visual information, but personally involved. The primary research question is: What is the interrelation between

information processing, enactive imagery, appraisal and emotional experience? In the next sections the MIP-model describes these interrelations theoretically.

A Mental Imagery Processing model

In the MIP-model imagery is conceptualized as a mode of processing, which includes perceptual or sensory (in particular visual) representations in working memory. In accordance with Staats and Lohr (1979), mental images are defined here as conditioned sensory responses. However, the model starts from a principle that in an empirical context it is not realistic to distinguish pure imagery processes. Mental imagery is namely generated by an individual's word-image repertoire. Therefore the model states that elaborated imagery processes are made up of a continuous interaction between a person's image-system and verbal-system.

The MIP-model is based on Paivio's (1986) Dual Coding theory and the cognitive framework provided by Yuille and Catchpole (1977). In accordance with Paivio's Dual Code model, the MIP-model contains a verbal and an image system. Analogous to Yuille and Catchpole's (1977) framework of cognition, the model consists of two fundamental levels of cognitive operation, namely the abstract plane and the representational plane. The MIP-model is schematically presented in figure 1. In fact the model describes the relation between cognitive processes and an emotional system.

insert fig. 1 about here

The core concepts of the MIP-model are knowledge structures, and propositions. In accordance with Bower (1981), and Lang (1984;1994), I assume that there is an **emotion-generator** with emotion connected to specific cognitions. In this context a propositional network is connected with an emotional system.

The Abstract Plane

The abstract plane is the storehouse of an individual's basic knowledge structures, such as schemas and scripts. Schemas are organized meaning structures that encapsulate knowledge about the self or the world; they provide selection criteria for regulating attention and lend a focus to the encoding, storage, and retrieval of information in a domain. More specifically, they allow the receiver to identify stimuli quickly, to cluster them into manageable units, and to select a strategy for obtaining further information in order to solve a problem or reach a goal (Singer and Kolligian, 1987). A self-schema, for instance, is an organized body of knowledge about one's intentions. The major function of such a self-schema is anticipatory, that is, it incorporates hypotheses about incoming stimuli, as well as plans for interpreting relevant information about the self. Information-processing differences may result from individual differences in schemas influencing people's anticipation, perception, and memory of situations (Dworkin and Goldfinger, 1985). Scripts are schemas about the appropriate sequence of events in well-known situations. The script concept demonstrates its efficacy as an organizing principle and exploratory mechanism in both the short term, e.g. planning a trip, and the long term, e.g. planning one's life. In the MIP-model, schemas and scripts are functional, because individuals can evoke images or recall words through the instantiation of these knowledge structures (see figure 1.; double headed arrows between the abstract and the representational plane). With regard to remembered experiences the MIP-model contains a propositional network of emotion information, for instance schemas about feelings like pleasure and relaxation.

The Representational Plane

The representational plane is the servant of the abstract plane, and permits representations that support the operative activities like thinking, remembering, and appraisal. Consistent with Paivio's (1986) dual code theory, the MIP-model consists of two representational

systems: (1) an image-system and (2) a verbal-system. In essence, dual coding theory postulates verbal and imaginal representations that encode word and object information, respectively, as well as connections that exist between (a) sensory events and symbolic representations, (b) verbal and imaginal representations, and (c) representations within the two symbolic systems.

From this point of view the MIP-model is a blend of Paivio's (1986) dual coding theory and Yuille and Catchpole's (1977) theoretical framework. Analogous to Paivio's dual code model, I assume that information can be represented **concretely** in two types of cognitive codes. Analogous to Yuille and Cathpole (1977), I suppose that there must be a more abstract representation of information that is located in the so called abstract plane. The latter premise is based on Pylyshyn's (1973) statement that: "as long as we recognize that people can go from mental pictures to mental words and vice versa, we are forced to conclude that there must be a representation (which is more abstract and not available to conscious experience) which encompasses both" (1973, p. 5).

From this point of view images and words are figurative, and are constructed under the control of the abstract plane. Consequently, the abstract plane is the location where **associations** between words and images are made. According to the network theory such associations are made via 'nodes' (see Bowers, 1981). Actually, the representational plane reflects that people have word-image repertoires. Once the individual has learned an extensive repertoire of word-image units (through conditioning principles), he/she can have an extensive and varied imagery experience based upon (external) presentation of words. Moreover, the individual himself is capable of voluntarily constructing language sequences than can call forth imagery (Staats and Lohr,1979). Information processed in the abstract plane is not available to conscious experience, whereas the information represented in the image- and verbal system is available to conscious experience.

The Processing System

The representational plane is divided into a number of subsystems proposed by Gibson (1966). Three functions of these subsystems are relevant: The **first** function of these subsystems is to construct representations of the environment on the basis of information transmitted from appropriate sense organs (see figure 1; sensory system). The level to which stimuli information is processed or represented depends on such restrictions as the nature of the information, attentional demands, the content of self-schemas, competing information, the level of personal involvement, etc. The MIP-model does not describe a direct connection between the sensory system and the emotional system because this connection is not available to conscious experience (it is largely controlled by the autonomic nervous system; see Izard 1993).

Information can be processed at different levels of cognitive elaboration (e.g., Chaiken 1980; Petty and Cacioppo 1983). According to the MIP-model the level of elaboration reflects the extent to which information in the representational plane is integrated with prior knowledge structures. The external information in Figure 1 is, for example, a visual ad with the slogan "Experience Puerto Rico, enjoy it!". This persuasive information can be processed at a low or high level of elaboration (see figure 1: processing levels). The major question is: What is the relation between processing levels and emotional responses?

Low-processing levels

Processes at a low level of cognitive elaboration evoke simple responses in the representational plane such as the retrieval of a verbal label, or an image of a perceptual object. In this case, the **second** function of the representational modes is to establish a kind of raw memory, which permits direct recovery of past experience. At this low level of cognitive elaboration images and words are just concrete representations, which are not involved with

dynamic operations of thought. For instance, a person reads the word "beach" and evokes an image of it, however without any special thoughts and feelings. In fact these are relatively autonomic processes emanating from the word-image repertoire. In this particular situation we may speak of a situation of low-involvement with the presented object. That is, the individual is not motivated (or in the mood) to process detailed information. In this particular case people can process images or words, however, without physiological feelings.

High-processing levels

Further the MIP-model distinguishes processes at a high level of elaboration. Information processing at a high level of elaboration establishes connections between encoded information and the knowledge structures (schemas and scripts) in the abstract plane. Thus, if processes are at a high level of elaboration, the **third** principal function of the representational plane is to permit the reconstruction of concrete representations of emotional experiences that have been incorporated into the abstract plane (see figure 1: the propositional network). From this point of view elaborated imagery and discursive (verbal) processing are dynamic tools of thought. In this case there is a high-involvement state with the presented object. The main reason for developing the MIP-model is to provide a theoretical framework to understand and to investigate the effect of enactive imagery on the consumer's affective responses. In respect of the visual persuasion and experiential processing, enactive imagery is defined as: "Experience-it-yourself thoughts, which integrate images and words in corresponding knowledge structures". Thus far for the MIP-model's structure and processing-system. Next the relation between information processing and emotional responses will be discussed.

Stimulus and Response Information

In accordance with Staats and Lohr(1979), the MIP-model states that both words and images

can serve to elicit an emotional response. However, words and images by themselves are not sufficient to produce emotional states. In this context we need a theory that offers a description of the cognitive processes involved in emotions. Peter Lang formulated such a theory.

According to Lang (1984), there exists a cognitive mechanism that is responsible for the activation of affective or emotional responses: Emotion is conceived to be an action set, defined by a specific information structure in memory. Analogous to Lang's emotion theory, the MIP-model assumes that emotional responses are generated by an associative network of propositions. It is suggested that emotion information is coded in memory in the form of propositions. Propositions are logical relationships between concepts, which are organized into an associative network (see figure 1). The MIP-model assumes that this type of information is in essence amodal. The emotion-information-network is a sort of prototype or schema, which is processed as a unit when a critical number of propositions are accessed. The conceptual network that organizes an emotional response includes two primary information categories: a) Stimulus-propositions; and b) Response-propositions.

The network is activated when a person attends to information that matches these propositions in the network. Lang's basic assumption is that activation of response propositions starts an associated motor program, which in turn occasions the emotional response (see figure 1; emotional system). Activation of stimulus propositions only has an indirect influence on the emotional response via association with response propositions.

According to the MIP-model, stimulus and/or response information, processed at a high cognitive elaboration-level, can activate the propositional network. If the stimulus and response propositions have been activated, its information is available to conscious experience through the representational plane, that is: Stimulus propositions describe external stimuli and the context in which an emotional response occurs. For example; 'I see people

sunbathing on a restful beach'. See figure 1: the double headed arrows between the representational plane and the Stimulus-propositions (S-prop.). Response propositions describe the emotional response, including verbal behavior, visceral and somatic changes and overt behavior. For example; 'I feel relaxed', 'I feel the hot sun on my skin', and 'I am sweating'. See figure 1: the double headed arrows between the representational plane and the Response-propositions (R-prop.) In fact there is empirical evidence that processing of response (i.e., experiential) information occasions more emotional responses than processing of stimulus information. In several experiments it was shown that subjects encouraged to imagine stimulus as well as response information had a stronger physiological response than subjects encouraged to imagine stimulus information only; see e.g. Dekker and Everaerd 1988; Lang 1984;1994 .

Meanings and appraisals

In addition to stimulus and response propositions Lang's theory also incorporates meaning propositions addressing how stimulus and response propositions are interpreted. The MIP-model does not explicitly consider these meaning propositions, because their function is already incorporated in the individual knowledge structures (e.g., sunbathing can mean "health" to one and "pleasure" to another). According to Lazarus (1990, p.145) knowledge is the cold cognitive stuff of which personal meaning is made. As such, mere knowledge does not result directly in emotion. Knowledge has to do with beliefs about how things work in general and in specific contexts. Appraisal is a personal evaluation of the significance of this knowledge in a particular encounter or existentially. The cognitive activity "appraisal" consists of a continuing evaluation of the significance of what is happening for one's personal well-being. In fact, there is general agreement that appraisal is the process by which knowledge-by-acquaintance (i.e., the immediate experience of events in the external or internal environment) is transformed into knowledge-by-description, which is the appraisal

and labeling of these events (Buck 1988). Emotions are formed as a result of a process of appraisals of what an event/stimulus can do for one's well-being. Further, the pattern of evaluations made by an individual on a small set of appraisals determines what emotions are felt by the person (Kumar and Oliver 1997). Appraisals, and feelings such as; "It's OK" and "I feel good" can be represented in the MIP-model's verbal system. With "I feel good about it" as a final judgement.

Conclusion: Elaborated Cognitions and Emotional Experiences

Lang (1984) assumes that information on stimuli and responses is always represented in the cognitive system as an associative network of propositions. The MIP-model suggests that both stimuli- and response information can be represented in the cognitive system without sensations or feelings. In this particular case the information is cognitively represented in the periphery of the representational plane, that is, the information is processed at a low level of cognitive elaboration (see figure 1: low processing level). Consequently, the propositional network and the motor programs of the emotional system can not be activated. Activation is only possible through an intensive instantiation of word-image repertoires, as well as the corresponding knowledge and meaning structures within the abstract plane. Subsequently the MIP-model states that non-elaborated cognitions just occasion primary affective responses. For example, a person who is just looking at a picture of a sunny beach, without special thoughts, only judges this picture as good or bad, attractive or not attractive, etc. On the other hand, if a person intensively activates the word-image repertoire regarding 'sunny beaches', an intensive connection with the abstract plane is made. In this case the instantiation of 'beach schemas' may generate both elaborated imagery and discursive processes about this object. According to the MIP-model these highly elaborated processes (e.g., enactive imagery) have the potency to match response propositions efficiently, which occasions an emotional response. Based on the empirical results of Lang's emotion theory, we may conclude that

response information elicits a stronger emotional response than stimulus information. Therefore the first hypothesis is: H1: Stimulus and response information elicits a stronger appraisal and emotional experience than mere stimulus information. Regarding visual persuasion the model suggests that enactive imagery is an experiential processing strategy with elaborated cognitions. H2: Enactive imagery has a stronger potency to elicit appraisal and emotional experience than nonenactive imagery. This can be explained because subjects who imagine themselves interacting with a situation have to activate relevant experience-schemas. On the contrary, nonenactive-imagery is more detached, that is, the self-experience-schemas are not involved, so that it is less likely that the emotion network and corresponding knowledge structures will be activated. The MIP-model takes imagery processing, memories, and emotional experiences (e.g., feelings) as interrelated concepts. A person can, for example, renew feelings (as opposed to simply recalling them) by mentally reliving an event that has already happened. The more vivid the reliving, the stronger the affect experienced. In such a case, the affect would not simply be retrieved from memory, it would be regenerated (Frijda, 1988). In a marketing context, the vividness of message information is assumed to influence consumers' evaluations or judgements. Information may be described as vivid, that is, as likely to attract and hold attention and to excite the imagination to the extent that it is: (a) emotionally interesting, (b) concrete and imagery provoking, and (c) proximate in a sensory, temporal, or spatial way (McGill and Anand, 1989:188). Marketers can use these ingredients in visual advertising, in order to stimulate enactive imagery. Finally, the model can be considered as a framework for future research on visual persuasion and experiential processing.

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