Functions and management of affect
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FUNCTIONS AND MANAGEMENT OF AFFECT: APPLICATIONS TO ECONOMIC BEHAVIOR *

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A conclusion from a review of the literature is that the cognitive revolution in psychology and consumer behavior research is followed, in the eighties, by more attention to affective factors. In this review the affective-cognitive interface and four functions of affect are described. Mood affects the recall and the estimation of probabilities of events and thus decision making; affect affects task interruption and task maintenance. Affect directs the release and inhibition of human resources. People strive for a certain level of arousal through sensation seeking and avoidance. The review is concluded by a description of the personal management of affect experience and expression.

1. Introduction

Many economic behaviors cannot be explained by the economist’s approach that people behave according to reasoning and try to maximize some utility function. Emotions do not seem to serve a role in this approach and seem to be irrational. But aren’t emotions and affect an integral part of our lives? Are emotions counterproductive and disruptive for ‘normal’ rational behavior? If not, which functions do emotions serve? Why are consumers emotional about the products and brands they use? Which emotions play a role in investment behavior? Why do people actively seek sensations in sports and in watching movies? In this article, we distinguish several functions of affective processes in general and in economic behavior in particular, and withdraw from the notion that emotions are only irrational and dysfunctional.

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After a long period that was dominated by cognitive theories of economic behavior, we are now witnessing a period in which affect gets a prominent place in our theories. Several questions come to mind, when analyzing the interrelationships between cognition, affect, and behavior. First, in which respects does affect differ from cognition? Isn’t it the current fashion that dictates the incorporation of affect in theories of economic behavior? Isn’t affect another name for long known cognitive concepts and processes? Second, if affect cannot be reduced to some form of cognition, do we really need it to describe, explain, and predict economic behavior? If affect is an entity conceptually independent of cognition, does it have any impact on economic behavior? Third, if affect does have an impact on economic behavior, is this effect large and consistent enough? Is the impact of affect predictable, and how much weight does it carry?

The present knowledge about affective processes and their relationships with cognitive processes and behavior is still limited, although, more than a century ago, Darwin (1872) already theorized about the expression of the affect in man and animal. Despite the enormous amounts of research on aspects of mood, preferences and emotion, a unified conception of the interface between affect, cognition and behavior does not yet exist. As mentioned by Norman (1985), it should be a conception that integrates research findings and our day-to-day observations and experiences.

Confronted with this state of affairs, theorists seem to be following one of the two roads to describe the role of affect in economic behavior: the road to synthesis, and to analysis. The road to synthesis leads, almost necessarily given the state of knowledge, to models, in which all possible components of affect, cognition, and behavior are linked together with bi-directional arrows. In such an approach everything is related to everything all of the time (Candland 1977; Holbrook 1986).

On the other road, analysis is the focus of attention. Here, specific functions of affect in cognitive processes and/or behavior, or functions of cognitive processes in the experience and expression of affect are investigated (Ray and Batra 1983). The disadvantage of such an approach is its incapacity to deal with all the interactions and complexities of the interplay between affect, cognition and behavior. Very few theorists nowadays will still adhere to Duffy’s third road, i.e., the conception of affect as only an extreme state of motivation (Duffy 1941).
In concert, the roads to analysis and to synthesis lead to an enhanced knowledge about the complexities of economic behavior. In this review, the analysis approach to the specification of the interplay between affect, cognition and behavior is chosen. A number of functions of affect and of components of affect in economic behavior will be described. Special emphasis will be placed on the impact of affect on economic behavior and on the (active) management and control of the experience and expression of affect.

2. Forms of affect

Affect is a generic term for all kinds of emotions, attitudes, evaluations, preferences and moods.

Some affect refers to the evaluation of objects, behaviors, ideas, or persons, such as attraction, liking, and prejudice. This is called: attitude, evaluation, or preference. This kind of affect is related to a specific target, object or behavior. These kinds of affect are a product of associative and cognitive learning processes, such as belief formation and change. Based on information processing, objects, behaviors, persons, or ideas are categorized on dimensions of favorableness, attractiveness or likability (e.g., Fishbein and Ajzen 1975).

Other kinds of affect are to a lesser degree mediated by cognitive processes, and are to a high degree related to the person: emotion and mood (people are emotional or in a mood, they have a preference for, e.g., a movie). Also, affect-based personality characteristics can be distinguished here.

In Table 1, emotion, mood, and affect-based personality characteristics are compared on four aspects (antecedents or ‘causes’, intensity, duration, and specificity).

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<th>Aspect</th>
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Emotion is a strong affective reaction to a person, an experience, a message, or a situation, for instance, bad or good news about one's health. Emotion, as a strong affect, is usually related to a specific cause, is localized, and has a strong somatic manifestation, such as arousal of the autonomic nervous system and motor expression (weeping, crying, laughter, facial and other body changes). The duration of an emotion is often shorter than the duration of a mood. Some severe emotions may have a longer duration.

Mood is a type of affect with no or a less specific target. Moods are less intense in the subjective experience and more diffuse, and often originate in the glandular system of the person (Nowlis 1970; Ewert 1970). The determinants of mood are often obscure, remote, and, although sometimes obvious, hard to manipulate. A pleasant mood, e.g., may be the result of the unexpected finding of a dime in a telephone booth (Isen and Shalker 1982), or of thinking about or imagining pleasant or unpleasant events (Srull 1984). Mood may be the remainder (residual) of a strong emotion (Stone and Neale 1984), or the result of glandular changes in the body, e.g., the premenstruation period in women (Smith 1975), or a combination of small, unrelated, events. As a consequence, mood is often difficult to verbalize and to attribute to a specific cause. A person might get out of bed on the wrong side without actually realizing it, until others draw his or her attention to it. Although mood is transient, it is a more enduring kind of affect than emotion (Eckenrode 1984).

More or less invariant feeling states, e.g., optimism or pessimism, come close to an (affective) personality characteristic (Gardner 1985). Personality is partly the 'sediment' of socialization processes and experiences from the past, especially during childhood. Emotional experiences may leave traces (traumata) that have a permanent influence on personality. Affect-based personality characteristics include happiness, intra/extraversion and neuroticism (Costa and McCrae 1980). The intensity of a personality characteristic is normally low, unless in case of mental illness.

All types of affect are accompanied by feeling, i.e., a subjective experience of the state of pleasantness or unpleasantness of the organism.

In this review, the relationship between the affective and cognitive components of human functioning, especially the functions of affect, are investigated, with special reference to economic behavior. The
functions that affect, in particular emotion and mood, can have will be focussed upon.

We will say hardly anything on typologies or taxonomies of affect; these may be found in a number of other publications (e.g., Mehrabian and Russell 1974; Izard 1977; De Rivera 1977; Russell 1980; Plutchik 1980; Havlena and Holbrook 1986; Holbrook 1986). More or less basic emotions can be distinguished. Researching basic dimensions in affect is important. Despite this a statement of James (1884) still has much appeal ‘...there is no limit to the number of possible different emotions which may exist...’ (pp. 453–454).

We will also not elaborate on measurement methodologies and on the physiology of affect or the components of affect. General technical descriptions of physiological measurement may be found in, e.g., Klebba (1985) and Kroeber-Riel (1979). Various other sources report on specific measures (see, e.g., Mehrabian and Russell 1974; Zuckerman 1979).

3. Affective-cognitive interface

3.1. Theories of the cognitive-affective interface

Since the early days of psychology, numerous authors have developed theories, frameworks and models of the antecedents and consequences of emotions. Different classes of emotion theories can be distinguished. Strongman (1978) mentions six classes of emotion theories. Recently, Leventhal and Tomarken (1986), discussing the state-of-the-art in research on emotion, distinguish four classes. For the present purpose, a more global distinction may be made. Based on the focus of attention, either the experience of affect or the expression of affect, two main classes of theories of affect can be distinguished: cognitive and somatic theories (Zajonc and Markus 1984).

3.2. Cognitive theories

In the cognitive theories of affect it is assumed that affect (arousal) needs a cognitive interpretation, based on the present external and internal cues. Four approaches to the cognitive theory of affect may be distinguished: misattribution of arousal to emotional cues; misattribution of arousal to neutral cues; excitation transfer; and bogus physio-
logical feedback (Leventhal and Tomarken 1986). Although most of the daily attributions of arousal to external and internal cues are correct, the studies on the cognitive-affective interface mainly employ misattributions.

(1) **Misattribution of arousal to emotional cues.** Subjects experiencing arousal, without knowing the real cause of their arousal, attribute their arousal to external cues (Schachter 1964; Schachter and Singer 1962). It resembles Bem's (1972) self-perception theory in the sense that people perceive a state of their organism and attribute this state to some external cause. E.g., after injection with adrenaline, causing arousal, subjects were, under certain conditions unaware of the real cause, friendly in a friendly environment and hostile in a hostile environment.

(2) **Misattribution of arousal to neutral cues.** Nisbett and Schachter (1966) demonstrated that low-fear subjects who expected that a inert placebo would arouse them, subsequently tolerated more intense shocks and rated their shocks as less painful. These subjects attributed their arousal to a neutral cue, the placebo, and were thus able to tolerate more pain, anxiety, stress or other adverse stimulation.

(3) **Excitation transfer.** Arousal does not terminate abruptly but dissipates slowly. Residual arousal from a prior situation will still be there in a subsequent situation. Subjects tend to attribute the residual arousal to the external cues in the subsequent situation (Zillman 1971). For example, residual excitation from physical exertion may intensify feelings of anger, enjoyment of music, and aggressive behavior. Just as in the case of misattribution of arousal to emotional cues, economic agents with a high level of arousal may show more extreme reactions than agents with a lower level of arousal. This might explain why gamblers take high-risk bets after loosing or winning a large sum of money. It might also explain vandalism of some supporters after a soccer match.

(4) **Bogus physiological feedback.** Actual arousal is not needed to make these attributions. False feedback on the state of arousal may be sufficient to misattribute the perceived arousal to an external cue present. Valins (1966) demonstrated this by giving subjects false heart-rate feedback while presenting pictures; these subjects then gave higher rates of sexual attractiveness to the persons on these pictures.
3.3. Somatic theories

The other class are the somatic theories of affect (Izard 1977). The representation of affect in these theories derives mainly from kinesthetic and proprioceptive feedback that is generated by emotional arousal. Here too, the cognitive system is involved in the representation of affect. The cognitive theories are mainly concerned with the experience of affect, whereas the somatic theories were developed mainly to describe the expression of affect.

4. Functions of affect

4.1. Introduction

Recently, the attention for the affective-cognitive interface has increased enormously, both in psychology and in consumer research. Researchers from the cognitive sciences have started to study the effects of affect on decision making and behavior. Much progress in understanding the role of affect in behavior, specifically consumer behavior, has been made. In this review the following four major functions of affect in economic behavior are distinguished.

4.2. Interpretation and organization (function A)

Affect is central in the interpretation and organization of information about one's own somatic and psychic functioning, and about the physical and social environment. Affect in this function is instrumental in knowing oneself and the environment, apart from or in cooperation with the cognitive system. Pain and fatigue indicate one's somatic constraints. Fear and anxiety indicate, how far one dares to go. Appreciation and disgust indicate, what one likes or dislikes. Boredom and stress tell about the lack or overdosis of stimulation of the environment. Affect in this sense is a direct and quick way of knowing oneself, others and the physical environment.

Affect also provides a simple structure of the world (Katz' (1960) knowledge function) distinguishing and categorizing objects, persons, and ideas on the basis of attractiveness and to give meaning to an otherwise chaotic universe. One may have forgotten the salient beliefs,
but retained the overall impression of favorableness. Affect is then a residual of a reasoning process of attitude formation in the past.

A third aspect of function A is the motivation to complete a task. Zeigarnik (1927) postulated that a certain level of arousal exists when one is performing a task. If a task is completed, the arousal decreases. But if a task is interrupted, the arousal remains at a high level, until one completes the task. Affect, and especially the arousal component, is thus instrumental in completing tasks.

Finally, mood, as a form of affect, has an effect on memory. It affects what one remembers, how much and how long one remembers what one has learned. The effects of mood on memory are discussed in a separate section.

4.3. Mobilization and allocation (function B)

Mobilization and allocation of resources is affected by the affective state of the organism. In strong emotional states of the organism, somatic energy resources are mobilized (peak performance) or inhibited (freezing). A separate section is devoted to the release and inhibition of resources.

Affect is a task interruptor as well. A sudden danger, a loud noise, or a fast moving object creates an emergency reaction with fear and a fight or flight tendency. Resources are then mobilized, adrenaline output is enhanced, and allocated to the more urgent task to cope with the danger.

Affect is aroused, if a long and important relationship is discontinued by death or separation (Berscheid 1982). After the discontinuation, one discovers how much affect was invested in the relationship and how much affect comes 'free' after the interruption of the relationship. Mourning processes could be understood in this perspective.

'Acting out' frustrations may be a consequence of the blocking of a goal. This could be understood in a similar way, as a discontinuation of the way to a goal. The blocking of a desired goal may create fury and frustration, even aggression (Dollard et al. 1939). It may be therapeutic ('catharsis') to act out one's frustrations in showing affect to others and to oneself.

Finally, affect may be a choice heuristic. It is a simple way of selecting a product to buy (affect referral; Wright 1975) or an adverti-
sement to attend to (primary affective reaction; Van Raaij 1984). In this situation, consumers just select the products they like, or attend to the advertisements or commercials they like.

4.4. Sensation seeking and avoiding (function C)

Sensation seeking and avoiding may occur in order to reach an optimal level of arousal. Berlyne (1963) postulates that people actively seek an optimal level of stimulation. Stimulation levels that are too low, create low levels of arousal (boredom). Stimulation levels that are too high, create high levels of arousal (stress). People try to avoid these extreme levels of arousal by actively seeking or avoiding stimulation (sensation). Separate sections are devoted to sensation seeking and avoidance, and to affect experience management.

4.5. Communication (function D)

Affect is shared with others. Emotional behaviors are a system for interpersonal communication (Leventhal and Tomarken 1986). Facial expressions, 'body language' or postures (Morris 1977), and exclamations all tell others about one's feelings and preferences. Affect is communicated to other people and to oneself, e.g., through the reactions of others. Affect of others is also quickly understood (see function A). Affect is a much quicker communication system than the cognitive system, and this is very useful in dangerous situations. A separate section is devoted to affect expression (communication) management.

4.6. Summary

These four major functions of affect will be discussed in this review. Note that the functions A and C pertain to the experience of affect, whereas the functions B and D refer to the expression of affect. Note also that the functions A and B may constitute a decision-making process, going from reception and interpretation of information to the mobilization of resources and to choice.

5. Effects of mood on memory (function A)

Recently, a number of studies have investigated the effects that mood states might have on memory (e.g., Bower 1981; Bower and
Cohen 1982; Isen, Shalker, Clark and Karp 1978; Srull 1984). Three main topics have been analyzed in depth:

(1) the effects of mood on the *encoding* of material in memory,
(2) the effects of mood on the *retrieval* of material from memory,
(3) the *state-dependency* effects of mood on memory.

Research by Bower and his associates (Bower 1981; Bower and Cohen 1982; Bower, Gilligan and Monteiro 1981) demonstrated that stimuli that are congruent with the mood state of the subject, are learned better than incongruent stimuli. When being in a sad mood, Bower's subjects encoded material that referred to sadness, better, while when the subjects were in a good mood, happy material was encoded better. This *mood-congruency* effect relates to the content of the material encoded in memory. The mood congruency effect resembles the 'accessibility' concept of Isen, Shalker, Clark and Karp (1978).

A second encoding effect, the *mood-valence* effect is not related to the content of the material, but to the specific memory processes during encoding. Leight and Ellis (1981) report that, experimentally induced, depressed individuals encoded material considerably worse than individuals that were either in a neutral or an elated mood. This effect was explained by the effect of mood on the cognitive effort, or, as others (Duffy 1941) would call it, motivation, with which the encoding of material in memory takes place. A competing hypothesis suggests that it is not so much the direction of the mood that affects memory processes, but its intensity (arousal). This arousal from positive or negative mood leads to improved information processing (Srull 1983).

The congruency effect refers to the content, the information elements of memory and memory processes in different mood states. The valence effect refers to the form of memory and memory processes in different mood states.

Congruency and valence effects of mood on the retrieval of material from memory have been demonstrated as well. Lawson (1985) asked his subjects to listen to and to read objective reports about six consumer products (children's bookpacks, electric bug killers, electric citrus juicers, interior wall paint, gas barbecue grills, and bathroom scales). Next, using a procedure adapted from Srull (1984), either a happy or a sad mood was induced in the subjects. The results of the analyses showed that sad subjects retrieved more negative than positive material
about the products from memory. The happy subjects recalled about the same levels of positive and negative material about the products.

Goldberg and Gorn (1987) studied the effects of program content on the reactions to commercials inserted in the program. A happy program induced a happy mood of the viewers, more affectively positive cognitive responses to the commercial, a greater perceived commercial effectiveness, and to some extent a better recall of the commercial. This study supports the mood congruency hypothesis, because the commercials had an upbeat, fun content.

Teasdale and Fogarty (1979) report that their depressed subjects took longer to retrieve pleasant material from memory than their happy subjects. However, the opposite did not hold for the retrieval of unpleasant material. There is much anecdotal evidence for such a mood-congruency effect on the retrieval of information from memory.

Discussing the results of survey research on consumer spending and saving behavior, Katona (1975) noted that ‘rarely do many people mention both favorable and unfavorable business news at the same time. According to whether they feel that business conditions are improving or deteriorating, only good news or bad news are salient to them’ (p. 200). This may be the consequence of selectivity in perception and/or retrieval, or of a tendency toward consistency.

Research indicates that the retrieval of material from memory is better, if the moods at the time of encoding and of retrieval match, independent of the specific mood involved. This is referred to as the state-dependent effect of mood on memory. Several studies have demonstrated this effect (Bower, Monteiro and Gilligan 1978; Leight and Ellis 1981). State dependence may have both valence and congruency effects (Srull 1984).

Although some fruitful specific (e.g., Isen, Shalker, Clark and Karp 1978) and general (Bower 1981) explanations for mood effects on memory have been formulated, the exact nature of the process is yet unknown (Simon 1982; Lawson 1985). A promising theory for a general explanation of mood effects on memory is provided by the network theory of memory. In this network theory it is assumed that feelings, thoughts, somatic manifestations and even physiological arousal are linked together in memory in a network of nodes and connections. Activation of one of the nodes of the network spreads to other nodes. Some authors (Zajonc and Markus 1984; Zajonc 1986) add that memory is not only a cerebral process, but that it can be represented in other parts of the body as well.
The effects of mood on memory have important implications for consumer and marketing policy. If consumers are in a good mood ('happy') when they watch or read advertising messages (encoding), we may expect positive effects for advertisements in general (mood-valence effect) and for 'happy' advertisements in particular (mood-congruency effect). Advertisers could select programs and situations, in which most consumers are 'happy', e.g., comedy series, amusement parks, and shopping malls. Or they could advertise in media that induce a good mood, and during periods in which consumers are generally happy, e.g., weekends and vacations.

Consumers in a good mood retrieve more positive elements from a message than consumers in a bad mood (mood-congruency effect). This is especially important in a shopping situation, where the atmosphere of a store (Kotler 1974) may induce a good mood through friendly personnel, background music, store design, and even through a nice smell. Consumers in a good mood will probably spend more than consumers in a neutral mood. The state-dependency effect may be enhanced by eliciting the 'same' mood in the store as in the advertisements. We should however be aware that these mood induction procedures in stores might be misleading for consumers, who are distracted from the intrinsic product qualities, might forget the negative aspects of the products, and might buy products they would not buy in less attractive environments. From a consumer policy viewpoint, however, consumers should be distrustful and critical rather than euphoric during shopping.

6. Effects of mood on decision making (functions A and B)

6.1. Introduction

Especially in the 1960's and in the 1970's, multi-attribute attitude models and subjective expected utility models have become the cornerstone of research on consumer decision making and reasoned action. The basic assumptions of these models are that consumers form expectations about the outcomes of a choice for a certain alternative, and that these expectations are combined with the utilities of the outcomes. After combining the expectation-utility parts, an overall
evaluation (attitude) of the alternative results (Schoemaker 1982; Fishbein and Ajzen 1975).

Mood may affect decision making in several ways. Mood may affect the content of the expectations people form about certain outcomes. It may affect, directly or indirectly, the utilities or values associated with the specific outcomes, and it may affect the form in which the expectation-utility parts are combined (combination rules).

6.2. Expectations

In a study (Bower and Cohen 1982), subjects were asked to estimate on a 0-to-100 scale the 'objective' probability of possible future events. U.S. subjects were asked, for instance, to estimate the probability that within the next three years they would take a vacation in Europe, or, that within the next ten years there would be a major disaster at a nuclear power plant in California. Experimentally, either a happy or a depressed mood had been induced in the subjects. Analysis of the probability estimates showed that happy subjects elevated their probability estimates of positive future events, e.g., the vacation trip to Europe, and reduced their estimates of negative future events, e.g., the nuclear power plant disaster. Exactly the opposite results were obtained for depressed subjects.

Johnson and Tversky (1983) asked two groups of subjects, respectively in a neutral and in a depressed mood to indicate the degree of risk and their own degree of worry about a number of possible causes of death, as well as their likelihood estimate of each type of cause. Depressed mood enhanced the risk and likelihood estimates of causes of death, as compared with the neutral mood.

Since the late 1940's Katona and his collaborators have surveyed consumer spending and saving behavior. The expectations that consumers have about personal and general future economic circumstances are a central component in this research program. In the course of years, Katona (1975) developed a measure of consumer attitudes, including expectations. This Index of Consumer Sentiment (ICS) represents expectations colored by affect. As Wärneryd (1982) notes, the ICS expresses the degree of optimism and pessimism in society, based on five survey questions. These questions cover the expectations about the business cycle, inflation and personal finances.
The ICS can be conceptualized as a measure of specific consequences of the consumers' mood at an aggregate level. The words 'mood' and 'sentiment' have similar meanings. Research with the ICS indicates that the consumers' mood is relatively stable over time and contributes to the prediction of consumer spending and saving. Katona (1975) states that the relative stability of the consumers' mood is the result of mass media information and interpersonal communication processes. Large groups of consumers receive regular mass media information about the economic situation in general. Interpersonal communication stimulates the dissemination of such information. Together with other factors, e.g., personal experiences, this information influences the consumers' mood in a positive or in a negative direction. Such differences in mood influence the expectations, consumers and investors form about the future economic conditions. These expectations then influence their spending, investment, saving, and borrowing.

Mood is a relevant concept in economic behavior and marketing. Consumers and speculators in a good mood form more positive expectations about a product, a service or a stock. They are willing to take more risk and are thus more easily convinced to buy the particular product, service or stock. Consumers and speculators in a bad mood form more negative expectations; take less risk; and are thus less likely to buy. Katona (1975) found that a positive (optimistic) mood enhances spending, especially on durables, luxury services, and consumer credit, and tends to decrease consumer saving.

### 6.3. Mood and decision making

The effect of mass media information on mood and decision making is reported in other contexts as well. Veitch and Griffit (1976) found that the content of a radio broadcast (good news vs. bad news) influenced the opinions people formed about other people on the basis of written descriptions of these other people. If not reinforced, a mood may fade away a short while. Isen, Clark and Schwartz (1978) report that the effect of a positive mood induction lasted approximately twenty minutes. Stone and Neale (1984) found that serious negative experiences affected mood negatively only during the same day. If, however, a specific mood is reinforced, the mood may remain relatively stable over time. We are not aware of research on the effects of mood on the use of decision rules, except for Wright's (1975) simple affect-re-
ferral decision rule. On the one hand, one could expect that consumers in a good mood are more likely to use the disjunctive and elimination rules, rather than conjunctive and linear-compensatory rules. On the other hand, people in a good mood are better information processors and may use more complex decision rules. Research is needed here.

7. Affect and task interruption (functions A and B)

Norman (1985: 310), discussing central issues for cognitive science, remarks that he has become ‘more and more dissatisfied with the conventional view of information processing’. One of the sources of his dissatisfaction is ‘the lack of consideration (in cognitive science) of the special problems and issues confronting an animate organism that must survive as both an individual and as a species’. Dangerous situations require immediate attention and immediate reactions of the organism. The same holds for sudden opportunities to reach important goals. For such events, perception, knowledge and language must be called into play. However, interpretation of the situation and the event must operate with immediacy, interrupting whatever task was going on. The cognitive system does not seem to be equipped to invoke such an interruption alone.

Interruption of a task may originate from different sources. Sensory stimuli, such as a loud noise or the sudden confrontation with a saber-toothed hungry tiger, will attract the attention, and consequently will distract attention from the ongoing task. This task is then interrupted. Stimuli from the autonomic nervous system, for instance, hunger, and affect-laden experiences from long-term memory, e.g., the recall of the experiences one had when one’s house burned down, may equally lead to an interruption of the task (Simon 1967, 1982).

Affect is present in these sources of task interruption. Pribram (1970) states that the mechanisms of emotions are of two sorts. One tends to open, the other tends to close the organism to further input. In either case, however, the orderly progression of ‘the growth of the PLAN being executed is brought to a halt’. Thus, affect may function as a ‘gate keeper’ of the organism, in particular as a gate-keeper that acts with a high speed.

Affect is not only a source of the goal or task interruption (function B). It may also be a consequence of task interruption (function A).
Zeigarnik (1927) described the effects of task interruption and postulated that interrupted tasks are remembered better, because people maintain a higher level of arousal with incompleted tasks. People also have the tendency to complete the interrupted task as soon as this is possible. There are individual differences in this tendency, which makes it possible to use it for diagnostic purposes. Entrepreneurs are, for instance, disposed to show a low tolerance for Zeigarnik effect; they are eager to complete unfinished tasks (Brockhaus 1980). Attempts to find a ‘Zeigarnik effect’ in advertising have failed (Heimbach and Jacoby 1972); an advertisement is probably not seen by consumers as a task to be completed.

Berscheid (1982) analyzed affect in interpersonal relationships. She described the ‘hot’ emotions that arise in the partners of a relationship that is interrupted, i.e., broken up by death or by separation. Such a strong affect may not be visible in the normal day-to-day interactions between the partners. But the potential of emotion exists and it shows up vigorously when the relationship is interrupted. This is function B: the mobilization of affect in order to overcome a severe loss and to reorganize one’s world. The affect in acting out of frustrations is relevant here. This pertains to affect and aggression that shows up after one discovers that a desired goal cannot be attained (the frustration-aggression hypothesis of Dollard et al. (1939)).

Thus, affect seems to be, under certain conditions, a source of task or goal interruption (function B), in order to replace the present task with a more urgent task, and, under other conditions, a consequence of the interruption (function A), especially of a long-time relationship.

The implications for consumer and marketing policy of these functions of affect are related to stimulus competition and attention, e.g., in advertising. Many advertisements compete for attention. Advertisements with certain characteristics (color, layout, size, picture, or headline) that attracts the attention or elicits affect, have a higher chance to be attended to (Van Raaij 1984). The advertisement or the commercial has often to interrupt an ongoing activity of the consumer. These attention-getting characteristics are of a cognitive (collative; Berlyne 1963) or an affective nature.

Affect is also a consequence of task interruption Consumers often have an ‘affective investment’ in a brand (loyalty). They don’t like to discontinue their relationship with the brand. Such a relationship might be even stronger with a shopkeeper, a supplier, a barber, or a physician.
8. Release and inhibition of human resources (function B)

Extreme changes in the mobilization of resources can be caused by strong affect. E.g., many examples from novels and own experiences indicate that humans possess far greater resources than are normally allocated to our daily activities.

Peak performance may be defined as behavior that exceeds the probable or predictable boundaries in the positive direction, and may occur in any facet of human activity, intellectual, physical, and emotional. Peak performance is more efficient, more productive, or in some other way better than modal behavior. Privette and Landsman (1983) conclude that acts of superior performance arouse widespread interest, but have scarcely been investigated. The conditions under which peak performance occurs, are varied, but in many instances strong affect seems to be one of these conditions.

Duffy (1941) argues that strong affect represents a change in the energy level, or degree of reactivity, of the individual. The excited person, for instance, has an energy level higher than normal. Energy level refers to the degree of resources mobilized.

Clearly, strong affect may release exceptional amounts of human resources. These resources may be allocated efficiently. However, they may also be allocated inefficiently. Extreme, undirected or misdirected states of the organism may occur, e.g., in panic reactions. Such reactions are labeled catastrophe reactions (Frijda 1987). Often fugitives from floods or fires try to rescue futile belongings rather than valuable or necessities: They save their tax-free liquor in an airplane crash! In some cases, catastrophe reactions may be effective in reaching a short-term goal, but they are certainly not efficient, contrary to peak performance.

Individual catastrophe reactions that are communicated and transferred to other individuals, may lead to large-scale detrimental effects. If one of the persons in a crowd starts pushing wildly, out of fear of being overrun, other may start pushing too, and more others. In the chain reaction that follows, many people may in fact be overrun. Something that would probably not have happened, if everybody had remained ‘cool’.

Such individual catastrophe reactions, leading to crowd catastrophe reactions, occur in economic situations as well. For instance, when the unjustified fear of scarcity leads to largescale excessive hoarding, this
leads to the scarcity expected, with all consequences of rising prices, long waiting lines, and even fighting that may go with it. Similar self-fulfilling prophecies, driven by strong either positively or negatively toned emotions, may arise on the financial and stock market.

Strong affect does not always lead to increased resource mobilization. In situations or extremely high arousal, this arousal may be internally directed and one may become immobilized, a paralysis of terror (Scitovsky 1976) or freezing (‘freezing 1’). This can be observed in terrified animals. The ‘keeping dead’ reflex may be functional for them in diverting the attention of the beast of prey. At the other extreme, in severe depression, and individual may give up, ‘resign’ or fall in a state of ‘depressive stupor’ (‘freezing 2’). In the first case of freezing, extreme levels of arousal are internally directed; in the second case there is no resource mobilization at all (Frijda 1987).

All four types of extreme changes in resource mobilization and allocation, as influenced by strong affect, are given in Table 2.

Whether peak performance, catastrophe reactions, or freezing will occur, is not dependent on the quality of affect. Both positive and negative effect may have the mentioned reactions as their consequence. In peak performance, the resources are allocated to the dominant goal. The task as defined by the individual becomes prominent, and events seem ‘like a mission’ (Privette and Landsman 1983). In catastrophe reactions, activities are not very well directed and coordinated. In freezing, the focus of attention seems to be the person’s self. However, such hypotheses are only general. A number of hypotheses have been advanced to explain the phenomena, e.g., response competition, attentional capacity, and mental disorganization. To date, no empirical results seem to favor one of the hypotheses over the others. Little is known about the exact conditions that invoked these extreme states of resource mobilization and allocation. Research seems needed.
9. Sensation seeking and avoiding (function C)

Our daily observations provide illustrations of consumers deliberately looking for new stores to visit and for variety in the products they buy. If a T-bone steak is served every night, one would soon tire of it and look for another dish. This is an example of variety seeking as a result of boredom with the present situation. This may be instrumental in learning about new alternatives. Variety seeking in consumer behavior is discussed by Faison (1977) and Venkatesan (1973).

Variety seeking is in conflict with instrumental learning (operant conditioning) and with cognitive consistency theories. These theories are based on the notion that persons strive for a low level of conflict and ambiguity, and thus for a low level of stimulation from the environment. According to these theories people strive for a consistent and familiar environment. These theories fail to explain, why people purposefully engage in new activities and learn about new alternatives.

A number of theories have been proposed to explain variety seeking behavior. These theories are based on the concept of an optimal level of stimulation as preferred by the individual. The optimal level of stimulation of the environment corresponds with an optimal level of arousal in the individual. Individuals do not prefer a minimal, but an optimal level of arousal. The optimal level varies from individual to individual.

Stimuli possess certain properties which have an 'arousal potential', e.g., novelty, incongruity, ambiguity, and uncertainty. These properties are considered to increase the level of arousal of the individual. If the actual level of arousal of the organism deviates from the optimal level, the individual will engage in 'exploratory behavior' (Berlyne 1963) in order to increase or to decrease his/her arousal level. An increase of arousal potential is reached by a further exploration of existing stimuli or by exploring new stimuli (diversive exploratory behavior). A decrease of arousal potential is reached by 'solving' the inconsistencies in the present stimulus field or by attending to less stimuli (specific exploratory behavior).

Raju and Venkatesan (1980) discuss four theories to explain sensation seeking and avoiding, by Berlyne (1960, 1963), Fiske and Maddi (1961), Hunt (1963), and Driver and Streufert (1965). Since Fiske and Maddi's ideas are very similar to and later than Berlyne's, only the latter will be briefly introduced here.

Berlyne (1960, 1963) states that persons try to alter their stimulus
field so as to attain an optimal level of arousal potential, i.e., the potential to create arousal in the person. If the actual arousal level is below the optimal level, discomfort in the form of boredom results. If the arousal level is above the optimal level, it produces discomfort in the form of stress. Discomfort, either boredom or stress, are negative affective states. In Berlyne's theory, exploratory behavior is evoked under both conditions. If the arousal potential is below optimum, exploratory behavior is directed toward more aspects of the present stimuli or toward stimuli with higher arousal potential (diversive exploration). If the arousal potential is above optimum, specific exploratory behavior is undertaken in order to become more familiar with the stimulus and to 'solve' inconsistencies in the stimulus field.

Hunt (1963) postulates an intrinsic motivation 'inherent in information processing and action' to explore incongruities in perceptions and expectations. Individuals prefer and optimal level of incongruity. This causes approach behaviors to increase incongruity, if one is below the optimal level, and avoidance behaviors to decrease incongruity, if one is above the optimal level. States of non-optimal incongruity are experienced as unpleasant.

Driver and Streufert (1965) state, as Hunt (1963), that individuals expect a certain level of incongruity in their environment. This expectation is at the optimum and represents the adaptation level (AL) of the organism. More or less incongruity than the expected level is experi-

Fig. 1. Relationship between environmental stimulation and affect (according to Driver and Streufert 1965).
enced as uncomfortable. The expectation of general incongruity is labeled General Incongruity Adaptation Level (GIAL). Deviations from GIAL motivate actions (exploratory behavior) to get back to GIAL. See fig. 1 from Driver and Streufert (1965).

In Region 1, the stimulation is very low. This creates a negative affect due to boredom. Efforts to find novel aspects are likely to be unsuccessful. Hence, the most likely behavior is an escape from the boring situation to a more stimulating environment.

In Region 2, the stimulation is slightly below optimum, but is associated with a positive affect. The individual will probably look for new aspects of the environment to increase the stimulation (cf. diver- sive exploration).

In Region 3, the stimulation is somewhat above optimum and the affect is positive. The individual will probably try to reduce the complexity of the environment by familiarizing him/herself more with the present stimuli and reducing their novelty and incongruity (cf. specific exploration).

In Region 4, the stimulation is very high. This creates a negative affect due to overstimulation and stress. Since it is not likely that the stimulation could be brought down, the individual tries to escape from this situation to a less stimulating environment.

Howard and Sheth (1969: 27–28) discuss the 'psychology of simplification' and the 'psychology of increasing complexity' in a similar way. In Region 3 individuals will try to simplify the situation, moving toward routinization and having a lower tendency for active search behavior. In Region 2 individuals tend to complicate their situation by, for instance, considering new choice alternatives.

It is easy to see that the above effects of stimulation levels have impacts on economic behavior. Product and brand familiarity may lead to brand switching (Region 1) or to distinguishing more aspects in a brand (complication), if these are available (Region 2). Brands might not be selected due to complexity and unfamiliarity (Region 4) or should be simplified and explained as much as possible (Region 3). Similar differences could be expected for the complexity of advertisements and the optimal level of advertising repetition.

Active and passive sports, adventure trips, amusement parks, movie theaters offer opportunities for people to find sensations and to escape the (boring) everyday life. In the section of affect experience management, sensation seeking and avoiding is developed further.
10. Affect management (functions C and D)

10.1. Impression management

In most research on affect, the effects of a certain affective state on decision making and behavior are studied. This emphasis on the effects of affective states, once they have been induced, may lead to the impression that affective states befall individuals, and are more or less involuntary states of the organism. However, often, individuals deliberately attempt to influence their experience of affect (e.g., sensation seeking and watching horror movies). Attempts to influence their expression of affect may be undertaken in order to communicate to others and/or to influence others and/or to influence oneself.

In using the term ‘affect management’ we do not want to imply that such behaviors are completely deliberate or reasoned. Many acts of affect management have been acquired in the course of time, or have been transformed from one generation to another, and are thus hardly open to conscious reasoning. We merely want to stress that considering affect as something that unwantedly befalls us, is too narrow a view. People actively strive for affect for many reasons.

Aspects of the experience and expression of affect are not only controlled in social situations, to exert influence on others. Individuals may attempt to manage the experience and expression of affect to influence themselves as well. In this respect, impression management theory may be extended to incorporate the self as the audience to influence. Affect management may occur by attempts to influence directly your own experience or your own expression of affect.

10.2. Affect experience management (function C)

In some occasions individuals attempt to influence the experience of affect. These influence attempts may be performed either directly or indirectly. In both cases, the affective state that one wants to experience, is different from the one one is experiencing. According to Berlyne (1963) people strive for an optimal level of arousal. Under conditions of a suboptimal level of positive affect, people strive for a more intense affect. Under conditions of a supra-optimal level of affect, people strive for a less intense affect.
Three forms of affect experience management are thus:

1. striving for a more intense affect (Region 2),
2. striving for a less intense affect (Region 3), and
3. striving for a different affect than the one experienced (Regions 1 and 4).

The forms 1 and 2 pertain to the intensity of the affect, whereas form 3 refers to the quality and direction of the affect.

On many occasions, people are experiencing an affect, while they actually want to be in an affectively (more) neutral state. When applying for a job, some people may feel insecure, emotionally aroused, and afraid. Most of them, probably all, will consciously try to control their affect, to control themselves, so as not to make mistakes, and it order to give the right answers to the questions asked. Much cognitive, and other activity may be needed to control one’s affective state, to experience a neutral affect. Notice how tired people may become after having gone through such an interview.

On other occasions people may also strive for an affect, experiencing no affect at all, or they may strive for a different affect than the one they experience. People may be in a ‘neutral’ mood, not feeling bad and not feeling good, and strive for excitement, thrills, adventure, love or fear. People may try do this directly by recalling certain items from memory, or by recalling or imagining certain situations (self stimulation). People may also try to change this indirectly by performing certain behaviors.

Manucia, Baumann and Cialdini (1984) studied the effect of the quality of mood (either good or bad) and the perceived stability of mood (either stable or unstable) on helping behavior. Half of the subjects in their experiment were brought into a positive mood, and half of the subjects in a bad mood. The results of the experiment showed that subjects in a good mood performed the helping behavior irrespective of the perceived stability of the mood. Of the subjects in a bad mood, only those who perceived that their mood was unstable, performed the helping behavior. Those who perceived the bad mood to be outside the realm of their personal control, did not help. Manucia, Baumann and Cialdini (1984) argue that helping is instrumental in pursuing a good mood for people who are in a bad mood. If the bad mood is perceived to be unstable, people in such a bad mood will help. When being in a good mood, helping may reinforce the good mood, if
it is perceived to be under personal control, or it may be a mere side-effect of the good mood, if the good mood is perceived not to be under personal control.

Services, such as the movies, theaters, sports, and amusement parks, are directed toward customer affective experiences. These customers want a reasonable part of sensation, fear and anxiety, and of romance and tenderness. They escape the day-to-day reality in order to experience certain affects. Fantasies, day-dreaming, the reading of novels may serve the same purpose of reaching an optimal level of stimulation.

10.3. Affect expression management (function D)

Individuals often attempt to exert influence over the expression of affect. In that case, the expression and experience of affect do not match. Three forms of this affect expression management are:

(1) expressing no signs of affect when experiencing affect,
(2) expressing signs of an affective state without experiencing it, and
(3) expressing signs of a different affect than the one experiencing.

On some occasions people experience a strong affect, but bite their teeth and act 'cool'. Contrary to inhibition, which is non-voluntary, this is a form of deception (Buck 1984). Affect expression management is a central component in human communication and education. Zajonc and Markus (1984) describe, for instance, the education at an English boarding school. The pupils in these schools are taught to repress the expression of many emotions. They learn to keep a stiff upper lip in most situations. In this case, affect expression management is strategic; it is meant to be advantageous in the British culture for the pursuit of long-term goals. In the course of time, such affect expression management may lead to a highly overlearned habit, never to show affect, the original functions of which individuals have long forgotten (Tetlock and Manstead 1985). Acting 'cool' while being in an affective state may have tactical functions, when it only serves short-term goals, confined to a specific situation and to a short-time period.

For most people it is hardly possible to express no signs of affect at all, when experiencing affect. Some experience of affect and the attempts not to show the expression seem to 'leak away', e.g., via the hands, the feet, and the face (Darwin 1872; Buck 1984). To an observer
and to a receiver of the message these leaks are relevant nonverbal cues in the detection of deception by the sender of the message, e.g., the nonverbal cues of a salesperson or a communicator may be an indication of the trustworthiness of the message.

Sometimes, individuals display all external signs of affect without actually experiencing the affect. Notice how realistic some actors know how to express certain emotions on stage or on the screen. Professional mourners may shed real tears. In some occasions, the audience may feel they are witnessing real grief, joy or fear. In this case, affect is expressed to influence others, the audience.

Affect expression management may also indirectly influence the experience of affect. This notion fits well into the network theories of emotion that have been proposed recently (see, e.g., Bower and Cohen 1982; Leventhal 1980). According to these theories, affect is a network of feelings, expressive-motor reactions, thoughts and memories, and as Zajonc and Markus (1984) suggest, the affective arousal, i.e., the physiological correlates of affect. In the emotion network the different components are linked together, so that activation of one component increases the likelihood that other components will be activated as well. Thus, activating the (motor) expression of affect may activate the experience of affect (the James–Lange theory of emotion; see James 1884). If this view is correct, the experience of affect may be influenced through the expression of affect: We do not tremble because we are afraid, but we are afraid because we tremble.

Research testing the facial feedback hypothesis is particularly relevant for this issue. According to this hypothesis, the experience of emotion is in part controlled by feedback of information about the state of certain facial muscles.

Laird (1974) asked his subjects to relax and contract certain specified facial muscles as they looked at one of two sets of pictures. There were four conditions in his experiment. Subjects either saw a set of pictures displaying members of the Ku Klux Klan or a set pictures displaying a number of children happily at play. While looking at the pictures, subjects either contracted their face so as to show a smile, or so as to frown. The results of the analyses showed that the subjects’ mood ratings were influenced both by the picture type and the facial expression type. Subjects were more elated by the happy pictures, when they had a smile on their face, and more hostile towards the Ku Klux Klan pictures, when they had a frown on their face. In other words, the
expression of either positive or negative affect reinforced the compatible affective state evoked by the picture type.

Although the results of studies finding support for the facial feedback hypothesis, have been questioned (Buck 1980), the literature suggests that, in general, changes in the expression of affect can alter its experience (Leventhal and Tomarken 1986).

People are well aware that they may indirectly influence the experience of affect by influencing the expression of affect. The exact process that takes place, when expression becomes experience, is not yet exactly known (James 1884). In many cases, cognitive activity will be involved, for instance, when people interpret their bodily states as expressions of their 'true' affect (Schachter and Singer 1962). However, hardly any cognitive activity may be involved at all (Laird 1974; Wells and Petty 1980).

Expression of a desired affect not only becomes experience through an intraindividual process, a social process may be involved as well. Showing a specific emotion in public may lead to congruent reinforcements (feedback) from others, and thus to the experience of the desired affect. An example is the advice to a woman in sex therapy to simulate the desired orgasm (expression of affect). Her partner then will experience this and become more confident of himself. This confidence may increase his sexual performance and thus her real orgasm (arousal and experience).

It has been noted that people often show close motor mimicry of the affective state of other persons, such as wincing when someone else is injured, crying at the distress of others, or smiling at another's delight. This phenomenon has traditionally been explained by heightened feeling, i.e., people become so involved in the emotional state of the other that they too experience that emotional state (Darwin 1872). However, there may be another explanation. Recently, motor mimicry has been explained as an act of communication. Facial and other nonverbal expressions of affect are conspicuously visible to others. Thus, close motor mimicry of affective states may serve functions of affect expression management. In movies and commercials 'canned laughter' is used to induce laughing by the audience, and thus to increase appreciation of the movie or the commercial.

Bavelas, Black, Lernery and Mullett (1986) hypothesized that motor mimicry is communicative. Thus the probability of being observed by a perceived should affect the sender's display of facial mimicry, and
receivers should interpret such displays consistently. If motor mimicry would reflect a private experience that happens to result in overt nonverbal behavior, the presence or absence of observers should have no effect. In an intricate study, Bavelas et al. (1986) found support for their hypotheses that motor mimicry is partly an act of communication. Affect expression management is relevant for consumer services, such as hospitals, funeral services, airlines, and restaurants. The employees in these services should either show the desired affect or not show their real affect, in order to assist their customers. Hochschild (1983) states that the emotional labor of the flight attendants encourages a cheerful and secure flying experience in the face of anxieties that might otherwise escalate into a dread fear of air travel.

11. Conclusions

11.1. Integration

Three representations of affect can be distinguished (Zajonc and Markus 1984): the ‘hard’ representations *arousal* and *expression* and the ‘soft’ representation *experience*. In the present contribution, these three representations have been central elements. The relationships between these representations are summarized in fig. 2.

The effect of arousal on experience may be described by attribution and misattribution processes (Schachter and Singer 1962; Zillman 1971). But on the other hand, experience may increase one’s arousal through diversive exploratory behavior or decrease one’s arousal

![Fig. 2. Relationships between arousal, experience and affect.](image-url)
through specific exploration (Berlyne 1963). Fantasies and day-dreaming processes may be part of this exploratory behavior.

Arousal expresses itself in observable body changes and can be measured with physiological measures (Klebba 1985). Self-observation in a mirror is an example of a direct effect of the expression of affect on arousal. But more often, experience seems to be a necessary mediator of how expression affects arousal.

Experience of affect may lead to the expression (communication) of the affect to oneself and to others. Reversely, affective expression might influence one's experience: If we are induced to laugh we feel happy. This could be explained as a tendency of consistency between expression and experience (Laird 1974) or self-perception (Bem 1972).

11.2. The affective-cognitive interface

The ‘separate systems’ view of cognition and affect is an overly simplistic approach to human functioning. Affect and cognition are both thoroughly intertwined, each system partly acting as a control of the other system and an entity to be controlled. Consciously and unconsciously, individuals strive for certain affective states and goals. In such behaviors, cognitive activity may be involved to control, to interpret and to accompany this process.

Cognitive activity is needed to make decisions that lead to these goals. In such behaviors affective states may be involved to control the process, to quickly categorize incoming stimuli, to gate-keep the process, and to interrupt the performance of ongoing tasks.

The more research on the interplay between affect and cognition will accumulate, the more we may find that the processes we are studying, cannot be completely separated from each other. We should look at the conditions under which the components of the cognitive-affective system function in certain ways. This is not a revolutionary conclusion, nor does it satisfy our desire for a theory, in which clear, independent elements may be distinguished. However, it may prove to be the most realistic conclusion at the moment.

Economic behavior, as economists study it, is modeled with cognitive factors. Psychology could bring in affect to increase the value of models of economic behavior. Affect may contribute to the explanation of ‘irrational’ behaviors. The affective system may help to provide organization and interpretation of the economic environment. Affect
may explain why people may use large resources of energy in certain situations. Lastly, the affective system is a communication system to others and to oneself.

To return to the issues formulated at the outset of this review, in our opinion, affect is something different from cognition. The effects of affect on economic behavior are large and consistent enough to justify this attention.

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