

Chapter 3

Emotions in Decision Making

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Abstract A blend of research methods applied in psychology, economics and neurology has contributed to deeper understanding of the causes and effects of emotional processes in decision making. New paradigms initiated the studies on the role of emotions and cognitive processes in decision making. When making choices, a human being formulates their cognitive judgments on the basis of their affective experience. The studies point to both the adaptive and nonadaptive effect of emotional experience. Intense emotions moderate or modify the cognitive processes that are a part of decision making. Therefore, in the light of current scientific knowledge, the complexity and importance of emotional processes must be taken into account when analyzing the decision-making processes.

Keywords Decision making • Rationality • Emotionality • Efficiency of decision-making • Consumption behavior

3.1 Introduction

Until now, the researchers who deal with decision-making processes have been focusing on cognitive, situational and socio-cultural variables, paying less attention to the emotional component. A new approach, called neuroeconomics, aims at building a complex theory which addresses the processes accompanying decision-making. Combined research methods traditionally applied in economics, psychology and neurology allow for more comprehensive description of a given phenomenon and for more effective prediction of potential human decision-making behavior. Rational economic models do not embrace such relevant factors of decision making as risk, ambiguity or uncertainty. Hence, the investigation into the role of emotions has become the subject of new theories and research methods applied in the neuroeconomic approach which focuses on defining the function of

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emotional and rational systems as well as on risk evaluation in predicting human behavior. The progress in cognitive neuroeconomics has greatly contributed to our understanding of the effect of emotions and cognition on people's choices in the situations of risk and uncertainty (Gutnik et al. 2006).

Decision making includes both the perception of benefits, information processing and the assessment of its outcomes. Modern models approach the decision-making process on many levels, abandoning the axiom of rationality and favoring emotionality instead. The perceived affective state influences the way the information is processed, thus enhancing the effectiveness of choices. Particularly, in the situations when decision must be made quickly, it is our emotions rather than an objective analysis that are a driver for our actions.

The diversity and complexity of emotional processes is an obstacle to define clearly whether the impact on decision making is positive or negative. Numerous studies point to many factors that are employed in the process. Theoretical considerations and research results outlined below indicate both conscious and unconscious participation of emotions. The first part of the chapter presents a review of classical and neoclassical concepts of decision making. Further considerations focus on the role of emotions in the situations requiring a choice. Individual cognitive analyses are based on emotional experience. The results of studies on the decision-making efficiency imply that affectivity is vital to the process. Some authors also describe the consumer behavior that is determined by emotional states, differentiating between the emotions that accompany buying situations and the consumer behavior. It seems important that several research projects look at the quality and effectiveness of decisions made by the elderly people. Their authors have found out that cognitive processes deteriorate with age, which is not parallel with emotional functioning. Thus, a question arises how aging is correlated with decision making.

3.2 Classical Decision-Making Theory and New Paradigms

Classical and neo-classical economic theories adopt the concept of homo oeconomicus that give primacy to rationality and optimality of human behavior in choice situations (Begg et al. 2000). According to classical decision-making theories, the decision-making process consists in the choice of the optimal course of action out of at least two options based on the choice of an explicit objective. Therefore, the important components of each decision are the possibilities and the direction of action, beliefs and expectations concerning the successful realisation of the objectives as well as positive or negative expectations regarding the outcome. The normative character of decision making means that actions are optimized in order to maximize gains while using rational methods to reach the goal (Dzik and Tyszka 2004). It seems important, however, to focus on these decisions that deviate from the adopted standard of rationality. The descriptive character of decision making takes into consideration the complexity of factors involved in

decision making, such as personality traits, emotions, motivation, propensity to risk, social determinants, etc. (Falzer 2004). The classical approach has its limitations and has not been used in practice because each decision-making process is treated in identical, standardized way (Beach and Lipshitz 1993).

In accordance with the normative model, uncertainty is an expression of the assessment of likelihood of a given event to happen in a specific situation. Bayes' theorem of probability, which is applicable to the decision-making rules, is based on the conditional probability of an event that can be corrected depending on the available evidence. Subsequent events may become a source of new evidence that can modify the likelihood of the new event. The benefit of this model is that it provides an opportunity to compare the decision that has been made with the available standard and to evaluate the rationality, or correctness, of one's behaviour. In fact, the weight of a rational element of the decision is lower than the one assumed by mathematical models (Patel et al. 2002).

The ongoing discourse on this subject provides a ground for new paradigms. Herbert A. Simon, the author of the theory of bounded rationality, points to the situations when an individual, basing on imperfect rules, makes decisions that are the most satisfying but not maximizing, i.e. the ones that seem to be the most gratifying in a given moment. Bounded resources, in a form of time or information limitations or our brain's incapacity to make decisions, preclude us from satisfying all the basic assumptions of the classical theory of rationality. The paradigm changed in 2002 when Daniel Kahneman integrated psychological sciences and economics when referring to the process of decision making in a situation of uncertainty. Prospect theory highlights the importance of heuristics in the decision-making process that can lead to cognitive biases in judgment (Kahneman 2012; Gruszecki 2001).

The adoption of the paradigm of the impact of emotionality and cognitivity on decision making gave impulse to dynamic progress of studies on emotions in organizations. Therefore, we accept the paradigm of bounded rationality where a crucial role is played by poorly measurable factors stemming from the imperfections of an information system; from uncertainty and propensity to self-restraint in finding solutions that are generally affiliated with the human system of values; from human skills, capacities, habits, motivation or sense of satisfaction. Hence, it is believed that, despite their capacity to optimize the decision-making factors, a modern human being cannot ignore their emotionality (Wach 2010). The cognitive approach is also present in theories that are founded on information processing models in which an individual makes their choice basing on a selective judgment of incoming information that is relevant in a given situation, rather than on the previously presented behavior pattern (Payne and Bettman 2004).

The studies on the perception of HIV risk and risky sexual behavior have failed to confirm that impulsivity is a good predictor of actual patterns of sexual behavior (Breakwell 1996). The research by Gutnik et al. (2006) based on cognitive neuroeconomic models referred to the role of emotions in public health-related decision making. The study on 60 young adult heterosexual men and women was aimed at analyzing the decision-making process concerning risky sexual behavior

(Steinbrook 2004). The rational and cognitive situation judgment did not explain the differences in the subjects' behavior. The analysis of the research results revealed a key role of emotions in risk decision making (Gutnik et al. 2006).

3.3 Affectivity and Decision-Making Efficiency

Emotions are an indispensable part of human life. They determine our actions and choices, being a vital element of our adaptation process. The complexity and diversity of human emotions condition human individuality. The ability to recognise emotions and cope with them is important in the decision-making situations.

Let us consider the following situation: at a demonstration of bed-linen and household appliances at her home a 70-year old woman buys a set of bed-linen at a price of 4000 zloty. There would be nothing unusual in the situation if not for the fact that the same product is sold in shops at a much lower price. Objectively speaking, it was the woman's independent purchasing decision that could seem surprising for some of her acquaintances. This is an example of the role of affect in making a consumer decision.

In some circumstances the decisions are made under the influence of emotional experience generated by marketing campaigns, while in other situations it is the consumer's temporary emotional state that determines their decision to buy (Achar et al. 2016). Being an objective observer of people making decisions in diverse situations, we can hypothesize that such behaviors result from the personal freedom of choice. In a long term, the consequences of all such choices may vary, so as do the reasons that initiate these choices. Sometimes, as a result of these decisions people suffer loss which leaves them emotionally shaken. It means that under some circumstances or interpersonal relations the freedom of choice may appear to be something that an individual would by no means want to experience and will strive to avoid it in the future. It should be noted that such a thesis partly stems from the cognitive dissonance, meaning that the more sense of freedom an individual feels when making an important decision, the stronger is the cognitive dissonance that evokes their aversive emotional experience. Hence, it can be assumed that the freedom of choice is to some extent a form of the individual's helplessness with its fear of responsibility and independent actions in the future. "Human activity is rooted in a human themselves, even though the extent to which people use this attribute varies greatly" (Brzeziński and Cierpiąłkowska 2008).

The analyses of human behavior and their life decisions reveal that there are individuals who can control their lives and those who become substantially dependent on others in various domains of social functioning. However, people tend to believe that their actions and decisions are a consequence of their rational thinking and judgments. Recent psychological studies have revealed that human effective functioning in decision-making situations is determined by people's emotions and needs because they influence human cognitive judgments (Kunda 1990, 1999; Dunning 2000; Gollwitzer and Moskowitz 1996; Forgas 1995; Kruglanski 1996).

It can be assumed that arousal plays a critical role in shaping perception of people's own emotional states, which is a potent decision trigger. The more aroused we are, the more we accept the fact that we are experiencing strong emotions which can influence our beliefs concerning our motivated reasoning. Yet, even in such situations a human is strongly motivated to justify their actions in order to defend the structure of one's own "I" (Kunda 1990, 1999). It is in line with the fact that when we waive the cognitive dissonance, we change our attitude which leaves us vulnerable to other people's lies, for example when selling to us an overpriced product after having created an atmosphere of friendliness and confidence (a personalized product demonstration at our home).

When confronted with their own decision, an individual needs to devise a justification for their action. To this end, they search their memory in order to find judgments that could substantiate their choice and explicitly validate its rightness. These attempts are often biased because people tend to justify and rationalize their decisions (Klayman and Ha 1987). Both the judgments and their justifications are based on specific motivation. As some psychological studies reveal, self-esteem strongly influences one's motivated self-perception (Kunda 1990). People tend to perceive themselves in a good light, hence for their own sake they construct theories that strengthen their self image after they have come to a desired conclusion (Dunning et al. 1995). It can be assumed that such optimistic judgment of one's own decisions becomes a gratification, thus contributing to a general feeling of happiness and improved quality of life. According to the existing studies, illusions about ourselves and our future existence as well as about our control over events give people more satisfaction than just a sense of well-being (Armor and Taylor 1998). It should be added, however, that unrealistic judgments of their own choices may lead to real risks and, in the future, cause failures in diverse domains of social life.

A human is a social being and in their striving for self-actualization they make decisions in diverse domains of their existence. Human choices may be essential factors in their pursuit of self-fulfillment because they provide feedback about their functioning. It is a long-lasting process which brings many emotions (Strelau 2000). According to Abraham Maslow, human behavior is motivated by unmet needs. Maslow called them deficiency needs and growth needs. The growth needs are meta-needs. They are governed by the rule 'the more, the better' and they bring positive emotions, while the growth-related stress is experienced as pleasant and desirable. Carl Rogers, another representative of humanistic psychology, said that people shape themselves through their own choices and actions where their self-actualizing human 'I' is in the center of their experience. Carl Roger believed that the conscious 'I' is a current experience of who a person actually is, how they react to and influence their environment and what decisions they make in this environment. In a social decision-making situation a human bases their choices on their own values, judgments and perceptions about themselves, such as "I can afford it" or "It is necessary for me" that they have developed over years. Every individual has their own well-established views that determine their understanding of other people's and their own world, thus contributing to his or her self-actualization or

growth. Rogers distinguished five major characteristics of the human growth: emotionally intensive openness to new experience; focus on the present; trust in your own body—instincts and gut-reactions (emotional arousal) are trusted; sense of freedom, which means that people have a cognitive control over their lives; creativity—originality of thinking (Strelau 2000).

We can hypothesize that it is through trust that humans exert influence on one another and on social groups. It is essential for people to be aware that the social and cultural context as well as information about the world and other people conveyed by diverse media have a non-neutral effect on human decisions in all domains of life. No human being is independent self-sufficient enough to make their decisions in isolation from what others want or expect of them. People tend to fall under influence of others who consciously manipulate them into choices that they will perceive as their own unbiased decision. The central factor is the need to be accepted by others (Zimbardo 2002).

The studies on affective experience and decision-making performance indicate that the process becomes more effective along with the increased intensity of emotions. Individuals who better identified their feelings and were more capable of controlling them achieved higher decision-making performance (Seo and Barrett 2007). Other authors pointed to the functionality, adaptability (Damasio 1994) but also to non-adaptability of affective experience in the decision-making processes. The level of functionality and disfunctionality of emotions indicates individual differences that are predictable to some extent.

Emotions relate to different affective states and are understood as intense affective experience directed at specific objects (Russell 2003). In literature the affective experience in decision making is viewed from two angles. The first assumes that in the decision-making process emotions can evoke various forms of prejudice and distort the reality. Hence they can have a negative effect on the decision itself or on the contents of the processed information. Research has shown that feelings may affect personal choices or judgments (Meyer et al. 1992). Intense feelings make people choose the most immediate goal, e.g. the one that temporarily uplifts your spirits disregarding its long-term effects. The second perspective states that emotions can improve decision-making performance as they underlie the controlled awareness necessary to employ cognitive processes in the decision-making process. Transient emotions make us focus on goals that are most relevant to us in a given moment (Ketelaar and Clore 1997). Emotions can make it easier to choose our priorities and to adapt to circumstances (Schwarz 1990).

Momentary affect determines the way information is processed, thus contributing to the decision-making effectiveness. Positive affect elicits the integration of cues received by an individual, increases flexibility or creativity (Staw and Barsade 1993). Negative affect in turn is conducive to effective decision making in situations requiring accuracy, objectivity, perseverance or realism (Elsbach and Barr 1999). Both perspectives implicate the importance of emotions in the decision-making process. What needs to be taken into consideration, however, is how these emotions are experienced and how an individual handles these emotions. When describing individual differences in affective information processing, the researchers refer both

to the scope of individual affective experience, its intensity as well as to the way the feelings are handled, expressed and integrated in a decision-making situation (Gohm 2003).

These two perspectives put emphasis on two affective processes involved in the internal stimuli processing. Emotions can be a moderator in the decision-making process by way of boosting the capacity of working memory or induce the decision-making process via behavior modification. Therefore decision making is associated with both a reaction to affective experience as well as with the launch of processes that regulate the effects of emotions. Properly regulated emotions can contribute to better performance (Forgas 2000).

Researchers emphasize the discrepancies in the ways of emotional regulation in decision making. In an influence situation people get involved in two types of affective information processing. On the one hand they deal with an open, constructive form of processing both affective and non-affective information, while on the other hand—with a rational and controlled affect processing (Larsen 2000; Forgas 2000). Individuals with high ability to regulate the influence of affect are less susceptible to emotions while making decisions. High objectivity and low vulnerability to emotions implicate high decision-making performance. Individuals whose choices are made as a result of induced affect are more likely to rely on their own biased judgments (Seo and Barrett 2007). High emotional responsivity increases the possibility of more intense feelings in the decision-making process. These intense feelings can moderate cognitive processes and reduce motivation to act by generating a larger number of resources (Seo et al. 2004).

3.4 Effect of Emotions on Customer Behavior

Alice Isen (2001) and Gordon Bower (1981) highlighted the role of affect at the time the decision is taken. The emotional state in which an individual is in a given moment as well as the organization of memories can determine the choice. Good mood enhances the availability of positive memories, which in turn instigates an individual to make favorable assessment of their environment or objects. In conclusion, information processing and object assessment are associated with better availability of positive emotions in one's memory when the individual is in a good disposition.

Schwarz (1990) stresses the importance of emotional signals that are treated by humans as a source of information about an object to be evaluated. This is particularly the case in a situation when one has to choose between alternative options that are difficult to compare. Metcalfe and Mischel (1999) point to two systems that rule decision-making processes. The affective system stimulates people to actions that are more impulsive and intuitive, where decisions are more prompt and effective and problem-solving strategies are more creative. It should be noted, however, that such a way of decision making is often based on stereotypical thinking or heuristics, which often leads to numerous errors in information

processing. On the other hand, the cognitive system is based on more rational, strategic thinking. In this case the response behavior results from launching one of such mental strategies.

The Affect Infusion Model developed by Joseph Forgas (1998) concentrates on the role of cognitive processes in decision making. When an object is familiar to an individual, information that can be retrieved from their memory affects the process the most. The affectively loaded information exerts influence on triggering the cognitive process, thus modifying the ultimate decision. One of the information-processing strategies is the direct access strategy when an individual refers to a stored opinion or approach toward the object of judgment. Another strategy is motivated processing that is launched when the individual in question is strongly motivated and has a clearly defined goal in mind. Sometimes, we take a shortcut and, with low personal involvement, we use the heuristic strategy where our mood provides feedback about our judgment. The Affect Infusion Model is best applicable in the analytic processing which the individual interprets available information, particularly in a situation when the object of judgment is atypical or complex. The more detailed the analysis, the more the affect disturbs the cognitive process (Gaczek 2015).

According to Bodenhausen (1993), arousal plays a vital role in interpreting emotions. The absence of arousal, e.g. when experiencing sadness, can prolong the process of thinking, making it more meticulous and systematic. Decision-making processes are also conditioned by the individual's expectations regarding the judged product or object. The anticipation of emotional benefits can accelerate making a decision. It may happen, however, that the anticipated affective state is not the one which actually occurs after the action has been taken (Patrick et al. 2007).

The listed literature distinguishes between the affect accompanying purchasing and consumption decisions. When an individual is making a purchasing decision, they evaluate the benefits of owning the good in question, i.e. process information, make a judgment and then make a final decision. In the case of consumption emotions are evoked by experience of using the purchased good. However, many researchers point out that purchase-related and consumption-related emotions overlap. The affect elicited at the time of decision making has an impact on the subsequent satisfaction of having the purchased good (Derbaix and Pham 1991).

The feeling of content during consumption has a positive effect on the assessment of the purchasing process. Consequently, the individual more eagerly undertakes purchasing activities and more often is willing to recommend the product (Hanzaee and Khanzadeh 2011). The study by Antonetti and Maklan (2013) reveals the effect of guilt and pride on the propensity to consume. People who feel pride in the consumption situation are more willing to behave according to their own standards and they are more motivated to pursue their goals. The feeling of guilt induces the need to reduce stress resulting from the experienced dissonance. Both the above affects contribute to more balanced decisions.

Studies on compulsive personality show that such people have an inclination for uncontrolled buying under the influence of negative emotions. When making a

purchasing decision, their actions are impulse-driven and they fail to carry out a rational loss/benefit analysis. The decision-making process is short and often triggered by a momentary stimulus. The individual is driven by a desire to own a good in order to reduce anxiety, regain control over their own behavior or to boost their mood (Silvera and Lavack 2008; Baumeister 2002).

Impulse buying is powered by the need to experience a positive effect, to improve one's mood and to satisfy one's urge. Positive atmosphere that accompanies a purchasing situation has a considerable effect on spontaneous decision-making devoid of rational, critical analysis. Therefore, the good mood increases the likelihood of a decision to buy a product that, in this case, serves the need to indulge a hedonistic desire (Beatty and Ferrell 1998).

3.5 Aging and Decision Making

To address problems arising from the process of society aging, more and more researchers conduct studies aimed at identifying impediments in the elderly people's functioning and needs. The decision-making performance changes with age. Scientists point to both qualitative changes as well as to changes in strategic choices or in satisfaction with the made choice. Transformations occurring with age also have impact on changes in cognitive functioning, which results in delayed reactions, reasoning or decision making. The emotional-empirical system processes information quickly, automatically and often unconsciously. The rational system is based analytical reasoning mode that is consciously controlled and employs cognitive processes (Kahneman 2003). Disturbances in the rational system make controlling impossible, thus leading to numerous errors and to intuitive information processing. Cognitive biases occurring with aging affect the reasoning performance in the absence of changes in the emotional-empirical system (Sobków 2011).

The studies by Mikels et al. (2010) have shown that the quality and effectiveness of decisions made by the elderly significantly decline along with the deterioration of cognitive processes. In the information-search situations their choices will be of the lowest quality. In situations involving the emotional-empirical system no marked differences in effectiveness were observed between the young and the elderly, excluding the circumstances when they had to concentrate on details. Then young people's decisions were of better quality.

Finucane et al. (2002) point to the presence of two components confirming the decision-making competence: the comprehension skills consisting in accurate interpretation of data, and the consistency skills meaning the ability to recognize similarities between two alternative possibilities, disregarding the differences in their presentation. The elderly individuals found it more difficult to understand information properly and their decisions were less consistent and more dependent on the way the data were presented to them.

Older adults show stronger propensity to decision making basing on their recalled beliefs and using the accessible cognitive schemes. Such a situation occurs

even when they receive feedback which indicates that their beliefs are wrong (Mutter and Pliske 1994). The changes in cognitive performance prolong the older individuals' decision-making processes. When deprived of time, they analyze a smaller amount of information and rarely re-consider their decision. The decision-making performance of seniors declines markedly when they have to deal with plenty of data and when they need to concentrate on details (Mata et al. 2007). Taking into consideration difficulties in functioning in older age we can assume that the limited number of alternative choices can reduce the probability of wrong decisions. Research has shown that in the process of decision making seniors prefer the Take the Best heuristic where the decision is made on the basis of one cue of the highest validity. Such a strategy seems to be the simplest, particularly when making a complicated choice. The second strategy preferred by the elderly is the Take Two strategy where the decision is made on the basis of two most valid cues (Gigerenzer 2007; Mata et al. 2007). Studies clearly indicate that when making decisions seniors have more difficulty in processing an excessive number of alternatives. They need significantly more time to make their choices, prefer simpler strategies that are less burdensome to cognitive processes and use less data treating them as equally important. In sum, in situations requiring substantial cognitive involvement, in older age the decision-making performance declines.

These considerable changes in cognitive structures observed in older age are not identical to the changes in emotional performance. Antonio Damasio points to the importance of the so called somatic markers being physiological signals sent by our bodies on the basis of our past experience in order to warn us against biased decisions. These signals are emitted before we even realize the weight of the situation. When making their decisions, both older and younger people are guided by emotional cues. Among a great deal of data they tend to choose and remember those that evoke pleasant emotions (Kovalchik et al. 2005).

3.6 Conclusions

As many scientific works emphasize, the impact of affect on decision making is significant. The individual's affective state influences the course of their decision-making process as well as their satisfaction with undertaken actions, thus becoming valuable information for their future performance. The information with a specific emotional load plays an important role in cognitive processes. Emotions modify information processing, thus influencing the end effect through changing the contents of our beliefs, judgments or our mode of reasoning. The complexity of affective processes as well as the role of other factors in decision making imposes the necessity to conduct inter-disciplinary studies. Due to emotions, individuals categorize and evaluate available goods. Basing on our own experience or preferences, we increase the likelihood of making the right choices. On the other hand, decision making leads to satisfying our individual needs and to experiencing expected emotions.

The adoption of the hypothesis about a significant impact of emotions on decision making contributed to better understanding how emotions distort this process and how they can improve our decision-making performance.

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