

By ZHANG YINGYAN

# THE INFLUENCE OF

EMOTION, PERSONALITY AND TACIT KNOWLEDGE

ON DECISION-MAKING STYLES OF

SMEs MANAGERS IN ANHUI CHINA

## 心理因素对中小企业管理者 决策风格的影响研究

张英彦 著



合肥工业大学出版社  
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## Abstract

Decision is to judge and decide, namely to consider, compare and choose schemes from more than two alternatives. Behavior is a process of achieving the goal of decision. To approach the goal depends on continuous decisions and realizing them. Every management needs to make decision, but the decision-making style is different. Decision-making style refers to the decision-maker's thinking and responding to problems and cognition, values and the way to treat pressure. According to the theory of limited rationality by Simon and the theory of uncertainty environment determination by Kahneman, such psychological factors as emotion, personality characteristics and tacit knowledge are thought to have influence on decision-making style. 210 professional managers from small and medium-sized enterprises in Anhui Province, China were chosen as respondents. The relationship between emotion and decision-making style, the relationship between personality and decision-making style, the relationship between tacit knowledge and decision-making style, and how the interaction processes among emotion, personality, tacit knowledge and decision-making were studied.

Segments of movies were used to cause emotion. Four survey questionnaires such as the Self-Rating Scale for Emotion (PANAS), Chinese Personality Scale, Rowe's Decision Style Inventory and Tacit Knowledge Questionnaire were used to gather necessary data. Multiple linear regression and structural equation analysis were used to test related variables with SPSS16.0 statistics software as analysis instrument.

It is determined in the study that analytic decision-making styles



among managers of small and medium-sized enterprises in Anhui Province, China are in the majority. There is significant positive correlation between positive emotion and conceptual decision-making style, and uncorrelation with other decision-making styles. There is no correlation between negative emotion and decision-making styles. Different personality factors have different influence on each decision-making style. There is no significant correlation between enterprise's tacit knowledge and individual decision-making style. However, emotion and personality factors have influence on the accumulation and formation of enterprise's tacit knowledge.

Based on the research results, the following are recommended;

1. Enterprises' management of Anhui Province, China should strengthen self-recognition of his or her decision-making style, learn how to manage the enterprises scientifically, understand the advantage and disadvantage of each decision-making style, and improve the management performance;
2. Emotional capital management should be strengthened and its positive function should be fully used by SME managers in Anhui Province;
3. The mechanism of tacit knowledge transition within SMEs in Anhui should be constructed, so that the management can utilize the tacit knowledge better.

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# Chapter 1 Introduction

## 1.1 Rationale of the Study

Decision, as one of the most complicated thinking forms, has drawn too much concern from experts in mathematics, economics, management, psychology and information since the late 1900s. There are two kinds of decision theories in terms of the process of development of decision theory and its research paradigm: one is rational decision theory, and the other is behavioral decision theory. John Neumann and O. Morgenstern put up utility value and calculating theory in 1944, which was considered as the birth of rational decision theory<sup>①</sup>. Then Leonard Savage established the subjective probability induction and Bayesian statistical decision method in 1956<sup>②</sup> (Savage, I. R., 1956), which enriched the theoretical base of rational decision. In the 1960s R. A. Howard and H. Raiffa put the result of decision analysis into practice. Rational decision theory emphasizes the use of scientific methods to study decision problems which requires that the process be clear and consistent; the problems, goal, constraint conditions and spare schemes be expressed clearly; the process of calculation and analysis, and the result be repeated regularly and logically, with no contradiction. M. Davis described the characteristics of rational decision as follows<sup>③</sup>(Li, 1993): 1) The optimal scheme is based on the consequence;

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① Von Neumann, J., Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Princeton; Princeton University Press.

② Savage, I. R. (1956). Contributions to the Theory of Rank Order Statistics: The Two-sample Case. *Ann. Math. Statist.*, 27, 590 - 615.

③ Li, H. Z. (1993). *The Instruction of Decision Making*. Beijing: Mechanical Industry Press, 7 - 11, 110.



2) Consider the current status of managers, regardless of their experience and management situation; and 3) Conform to the laws of probability theory.

Behavioral decision theory is from the paradox put forward by Allais<sup>①</sup> (1935) and Ellsberg<sup>②</sup> (1961) that develops with the purpose of dissolving the problems that cannot be dissolved by rational decision theory. The general paradigm is: make hypothesis on characteristics of decision behavior—test the hypothesis—get findings.

Behavioral decision theory concerns mainly “to judge” and “to choose”. To judge means how the process of decision is going on when the probability is estimated (Ellsberg discussed the problem in his paradox)<sup>③</sup> (1961). To choose means how the choice is made when the choices are many (it was discussed in the paradox by Allais). The framework is based on cognitive psychology, where the judge and choice are a process of information processing.

The method for behavioral decision theory is psychological experiment, which explores the psychological elements determining judgment and choice, and gives theoretical analysis of the effect of the psychological elements on judgment and choice.

In the mid and late 1980s, all the processes of decision were involved in the behavioral decision theory, namely: information stage, designation stage (including judge), choice stage and implementation stage, and how people implement in different stages was explored, and of course it was fruitful. Kahneman and Tversky put forward Prospect Theory in 1979<sup>④</sup> (Camerer, 2004), and made great and brave innovation on traditional economics. Some basic hypotheses of traditional economics were revised,

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① Allais, M. (1935). Le Comportement De L'homme Rationnel Devant La Risqué Critique Des Postulats Et Axioms De L. Cole Americaine. *Econometrica*, 21, 503–546.

② Ellsberg, D. (1961). Risk, Ambiguity, and the Savage Axioms. *Quarterly Journal of Economics*, 75, 643–699.

③ Ellsberg, D. (1961). Risk, Ambiguity, and the Savage Axioms. *Quarterly Journal of Economics*, 75, 643–699.

④ Camerer, C. F. (2004). Behavioral Economics Past, Present, Future. In C. F. Camerer, G. Loewenstein, M. Rabin (Eds.), *Advance in Behavioral Economics*. Princeton University Press.



which widened the field of behavioral economics. Too much experiment research has shown that there is decision bias that deviates from the traditional optimal behavior such as certainty effect, reflection effect, anchorage effect, regret theory and excessive self-confidence. Kahneman won the Nobel Prize in 2002 for his contribution in this field.

The characteristics of behavioral decision theory are: 1) It emphasizes the decision behavior of decision makers; 2) It focuses on the cognitive and subjective process of decision makers, and the psychological explanation behind the decision behavior, but not a comment on whether or not it is right; and 3) The mechanism of information processing in judgment and choice and the effect from inner and outside environments will be explored in terms of cognitive psychology, variables often ignored by rational decision theory will be refined, and the model of rational decision will be revised and perfected.

As to the specified method, there are two routes: 1) Quantitative analysis with mathematics as tools, decision method and technology as emphasis, under the guidance of operations research, cybernetics and information science; and 2) Descriptive research exploring the psychological activity, mechanism, behavior process and social factors, with emphasis on personality, motivation and emotion of decision makers, under the guidance of psychology, sociology, logic and organization theory.

Under the guidance of behavioral decision theory, the study took the latter route, concerning mainly psychological activity and psychological mechanism in the process of decision-making. The relationship between style of private decision-making, emotion, personality and particularly tacit knowledge was explored, including the interaction between emotion, personality and particularly tacit knowledge in the process of private decision-making.

## **1.2 The Problem**

### **1.2.1 Statement of the Problem**

The study explored how emotion, personality, and tacit knowledge would influence the style of decision-making of selected SMEs managers in



Anhui, China as basis for recommending improvements to the decision-making styles of managers.

Specifically, the study sought to answer the following research questions:

- (1) What is the profile of the selected SMEs managers in terms of: Emotion; Personality and Tacit Knowledge.
- (2) How does emotion influence the style of decision-making?
- (3) How does personality influence the style of decision-making?
- (4) How does tacit knowledge influence the style of decision-making?
- (5) What interaction can be established among emotion, personality, tacit knowledge and decision-making?
- (6) What recommendations can be made to improve decision-making level of SMEs managers?

### 1.2.2 Statement of Assumptions

Simon holds it to be true that decision is the core of management<sup>①</sup>(Bao & Tan, 2009). To manage is to make decision, regardless of the management levels.

The classical decision theory that prevailed in the economic field before Simon is based on the assumption of complete rationality which endows the decision maker a perfect rationality. From psychology, Simon argues that the rationality of human behavior is a limited rationality in given environment. Limited rationality is determined by human's psychological mechanism.

Simon believes that psychological process cannot be neglected when choice is made in economic activities. So psychology should be involved in economic behavior. Rationality in psychology emphasizes process of choice, but not result. Therefore human's actual choice cannot be perfect, but limited. He put forward the definition of limited rationality in *Administrative Behavior* in 1947, "subjectively complete rationality is

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① Bao, Y. Z., Tan, L. W. (2009). The Theoretical Pattern and Thought Value of Simon Decision-making Management. *Economic Survey*, 04, 5-8.



pursued, however it is objectively conducted to a limited degree”<sup>①</sup>. According to his understanding, if the actor employs calculation and reasoning in making choice, his choice is rational; If his choice is mainly affected by the perceptual system (such as emotion, nature and impulse), his choice is sensible. On this basis, Simon considers rationality or complete rationality popular in mainstream economics as substantive rationality, and the actual choice of the actor in the economic activities as the limited rationality or process rationality.

Simon opens an eye for limited rationality, and subsequent researchers analyze the mechanism of limited rationality of different views with Simon's theory as basis. The typical views are as following:

(1) Physiological limitation of the actor, that is to say, physiologically the innate ability in calculation and reasoning is inadequate. Miller believes that to use information and knowledge is limited by innate memory of the brain, which results in incomplete rationality of the actor.

He finds that there are  $7 \pm 2$  items in the capacity of fast and instant memory of the actor (in Simon's view, there are maybe 8 items); the organization of memory is a kind of hierarchy organization of list, which renders the thinking process to be a state of serial processing or searching (the problems concerned are limited meanwhile), and therefore limits the extent of attention (selective attention) and speed, and capacity for information and knowledge acquisition. Correspondingly, the limit of the extent of attention and the scope of knowledge results in bias in value and goal commitment (similar to ignorance and religion or beliefs caused by certain purpose), and in return, bias limits the extent of attention and acquisition of knowledge<sup>②</sup>(Miller, 1956).

(2) Double-system principle of intuition and reasoning. Daniel Kahneman (2002), a professor from Princeton University, the winner of Nobel Prize in economics in 2002, constructs a double-system mode of

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① Simon, H. (1947). *Administrative Behavior*. New York: Macmillan, 24.

② Miller, G. (1956). The Magical Number Seven Plus or Minus Two: Some Limits on Our Capacity for Processing Information. *Psychological Review*, (63), 87 - 90.





thinking, which is used to explain the reason for limited rationality of actors<sup>①</sup>. The double-system mode of thinking comprises intuition system and reasoning system, and the former has such attributes similar to sensible system as: fast, parallel, automatic, free of strenuousness, imagination and slow learning; the latter has such attributes as follows: slow, continuity, carefully controlled, strenuousness, rules and flexibility. Reasoning system serves as supervision and control for intuition system. The decision or choice of actors is determined by either both systems or separate system. The wrong judgment is usually caused by fast and automatic reaction of intuition system and the failure of the reasoning system to intervene. Conclusions can be drawn as: behavior of choice of human is the result of the combination of intuition (sensitivity) and reasoning (rationality). Actually, all the choices of the actors are limited rationality, for rationality system collaborates with sensitivity system. When the choice is rational, it means rationality system prevails over sensitivity system; similarly when the choice is regarded as irrational, that means sensitivity system prevails over rationality system. Therefore, the problem of the degree of limited rationality depends on which of the two systems is dominant. The more differences, the closer to complete rationality. For example, when rationality system goes far beyond sensitivity system, it means higher degree of limited rationality; and when rationality system is in an ultimately dominant position, sensitivity system does not function, which means the choice of the actor is complete rationality. And the contrary result will be produced by the contrary situation.

(3) Sanity cost means limited rationality. Cognitive psychology insists that the rationality of choice is determined by the sanity mode of the actors. Economically, sanity is a kind of resource. What's more, it is a kind of scarce resources, which makes rationality limited. Mainstream economics insists that sanity is a kind of unlimited resource that is accessible to actors, and the cost to obtain sanity is zero, which results in

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<sup>①</sup> Kahneman, D. (2002). Maps of Bounded Rationality: A Perspective on Intuitive Judgment and Choice. *Prize Lecture*, 12(8), 465 - 480.

complete rationality for the actors. Actually, sanity is a kind of scarce resources, cost tends to occur once sanity is used, and then rationality is made limited<sup>①</sup>(Denzay & North, 1993).

Under the assumption that actors are completely rational, the optimal choice can be made from the alternative schemes. While under the assumption that actors are of limited rationality, the choice is not the same. Simon believes that there are two steps involved in the process of decision-making, namely from search up to satisfaction. If there are no alternatives for the actors to make a choice in advance, they have to search. However, utility maximization is not indispensable for the search mode. As to the perfection degree of the alternatives for the actors to choose, there is a level of expectation, and once they find the best alternative that conforms to their expectation, the search will end, and the choice will be made<sup>②</sup>(Simon, 1989).

The principle of satisfaction is put forward in "Rational Choice and the Structure of the Environment". The principle of satisfaction refers to the principle that helps the decision maker to search and find the satisfying alternative. That is to say, among a large scope of alternatives, it is not necessary for a decision maker to find the most optimal alternative, but to choose the one that best conforms to the requirement for achieving his goal, and at the same time some more searching activities will cease<sup>③</sup>(Simon, 1956).

Kahneman and Tverskey believe that intuition judgment plays an important role between automatic operation and deep consideration of reason. Based on the double-system mode of intuition and reasoning, Kahneman points out that actors tend to choose heuristic decision instead of

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① Denzay, A., North, D. (1993). Shared Mental Models: Ideologies and Institutions. *Economics Working Paper*, 1.

② Simon, H. A. (1989). Rational Decision-Making in Enterprise and Organization. In H. A. Simon (Ed.), *The Theoretical Basis of Modern Management*. Beijing: Beijing Institute of Economics Press, 162-166.

③ Simon, H. A. (1956). Rational Choice and the Structure of the Environment. *Psychological Review*, 63.



the most optimal alternative in terms of behavioral economics, due to the limited rationality, such as available heuristic decision, representative heuristic decision, decimal principle and adjusting and anchorage effect, which of course may lead to target deviation. So for the same problem, people tend to make different choices, or even sometimes quite opposite choices at different time<sup>①</sup>(Kahneman, 2002).

The study is based on both the theories of limited rationality by Simon and uncertainty environment determination by Kahneman. Man is not an economic man of complete rationality, and the rationality of human is a kind of limited rationality that is placed between complete rationality and complete irrationality, and depends on the implementation of human. Therefore, such psychological factors as knowledge, experience, emotion and motivation will function dominantly or recessively in the process of decision-making, and affect the validity and efficiency of the decision made by decision makers. It is based on what is mentioned above that the psychological mechanism of decision-making is to be involved in the study.

### 1.3 Significance of the Study

The study focuses on the relation of decision and psychological elements, and explores the effect of psychology on managerial decision, which belongs to the category of management; psychology is the object of researches of behavioral economics and cognitive psychology. Behavioral economics is the cross-discipline subject of psychology and economics. So psychology, economics, cognitive psychology and behavioral economics are involved in the process of the comprehensive research that is cross-disciplinary. Only when analysis is made in different views, can we find out the new way, new direction and new key to solve problems. In that lies the significance of the study.

The practical significance of the study is described as follows:

(1) Help people to avoid misunderstanding that is apt to reach when

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<sup>①</sup> Kahneman, D. (2002). Maps of Bounded Rationality: A Perspective on Intuitive Judgment and Choice. *Prize Lecture*, 12(8), 465 - 480.