

The Influence of Emotion on Inter-Temporal Choice: Based on Evaluation Tendency Framework Theory

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Abstract

Emotion is an important influencing factor in inter-temporal choice. The evaluation tendency framework theory explains the impact of different specific emotions on the inter-temporal choice overriding the valence. It is also considered as the important basic theory of a specific emotional paradigm. The thesis summarizes the formulation of this theory, the connotation, the assumption of neural mechanisms, and the application of the theory in inter-temporal choice research. It is pointed out that the theory can extend its research in terms of the specificity of emotion, the influence of time perception and so on by using neurocognitive science, and further explore the influence of different specific emotions on different inter-temporal choice and their internal psychological mechanisms.

Key words: Emotion; Evaluation tendency framework theory; Inter-temporal choice

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INTRODUCTION

Inter-temporal choice is a process of making trade-offs and choices when people face benefits or losses at different points in time. In real life, people often

encounter problems that need to make trade-offs between the nowadays and the future. For example, individuals may be more used for economic investments or insurance purchases than current consumption, in order to guarantee future life. They may also give up long-term concern for health in order to satisfy the current physiological temperament. It often encounters inter-temporal choice in the decision-making of national economic and social issues, such as how the government weighs the development of current economic construction and the long-term environmental protection, and how to balance impact of savings policies on short-term and long-term economic. Why do decision makers show short-sighted behavior? How can policymakers be more patient on inter-temporal choices? All of above are problems that inter-temporal choice studies hope to solve.

Since most of the choices made by humans are time-sensitive (Kim, S., Hwang, J., & Lee, D. 2008; Soman, Ainslie, & Frederick, 2005), how to weigh objective values of subjective feelings in different time will have a direct impact on the outcome of the decision. Inter-temporal choice early research mainly focused on the time discounting and developed a series of theoretical calculations and explanations on the discounting rate based on the assumptions of the rational economic man (Kable & Glimcher, 2010; Mazur, 1984; Laibson, 1997; Read & Roelofsma, 2003; Samuelson, 1937). But in realistic situations, such models cannot fully predict the propensity of individuals to make choices during real inter-temporal choice. In the study, the researchers controlled the “amount” variable, such as changing the amount of money obtained (Thaler, 1981), or changing the income or loss scenario (Ma Wenjuan, Suo Tao, Li Yadan, 2012), and the “time” variable. Control, such as increasing the time between the two options (Kirby & Herrnstein, 1995) or adjusting the length of the comparison interval (Scholten & Read, 2010), found a large number of research evidence against the utility of the discount.

It can be seen that the research based on the rational economic man hypothesis believes that human decision-making is completely rational and is the process of pursuing the maximization of interests. Emotion, as a factor that interferes with rational decision-making, becomes a strictly controlled distraction variable or is excluded from research. However, the research based on this does not fully explain the complex inter-temporal choice phenomenon. In order to better explain the individual's decision-making behavior in intertemporal scenarios, the researchers began to pay attention to the impact of individual factors on their inter-temporal choices, such as uncertainty tolerance (Li Jie, Huang Renhui, Zeng Xiaoqing, 2015; Epper, Fehr-Duda, & Bruhin, 2011; Patak & Reynolds, 2007), self-control impact on the propensity for inter-temporal choices (Kable, & Glimcher, 2007; Luo, Ainslie, Pollini, Giragosian, & Monterosso, 2012; McClure, Laibson, Loewenstein, & Cohen, 2004 Etc.). At the same time, the role of emotions in inter-temporal choices has gradually gained attention (Harle, 2007; Lerner, Small, & Loewenstein, 2004; Ratner & Herbst, 2005), and has produced a series of theories to explain the role of emotions in decision-making (Loewenstein, Weber, Hsee, & Welch, 2001; Slovic, 2002; Van Kleef et al., 2005).

Nowadays, a large number of studies on the impact of emotions on inter-temporal choices are based on the paradigm of emotional titer research in risk decision-making research. The research paradigm believes that the arousal of different nature emotions (positive or negative) in the decision-making process will affect the intertemporal period. Decision-making behavior (Wang Peng, Liu Yongfang, 2009). In particular, negative emotions tend to make people more impatient, which is easy to produce short-sighted impulsive behavior (Rounds, Beck, & Grant, 2007), while positive emotions can enhance individual cognitive flexibility and build higher thinking. Level, with a more far-sighted vision, which enhances the individual's patience for reward (Ifcher & Zarghamee, 2001). This view is supported by many experimental studies (Elster, 1998; Forgas, 1995; Pyone & Isen, 2011; Jins & Isen, 2011; Lempert, Glimcher, & Phelps, 2015), as well as for understanding mood and inter-temporal choices. The relationship laid a good foundation. However, the division of emotions only by "positive-negative" potency seems too general and rough. This division does not explain well the influence of different specific emotions with the same potency on inter-temporal choices, such as experimental studies (Lerner & Weber, 2012) found that people with sadness were more impatient and more inclined to immediate returns, while disgust with negative emotions had no significant effect on interpersonal choices. In addition, the study of fear affecting inter-temporal choices found that fear group participants had a higher time discount rate and were more short-sighted in obtaining money (Yu Shengxiang et

al., 2016). In order to better explain the impact of specific emotions on inter-temporal choices, a series of theories have been developed, the most representative of which is the evaluation tendency framework theory proposed by Lerner and so on.

This article will explore the impact of emotion on inter-temporal choice from the perspective of The Appraisal-Tendency Framework (ATF) theory, aiming to review predecessors' research on the impact of different specific emotions on inter-temporal choice and from the perspective of evaluation dimensions. Differences start to compare the impact of different specific emotions on inter-temporal decision-making, providing new ideas for follow-up research. Specifically, this article first introduces the evaluation tendency framework theory, and then reviews the application of the evaluation tendency framework theory in emotional and inter-temporal choices research. Finally, it summarizes the application of a specific emotional paradigm in risk decision-making research. On this basis, it looks into the future research direction.

1. EVALUATION PROPOSAL FRAMEWORK THEORY PROPOSED

Some studies have questioned the theory of emotional valence, such as Bodenhausen and so on. (Bodenhausen et al., 1994a) in the study of the impact of negative emotions on social decision making and found that anger and sadness, both of which are negative emotions, will affect individual social decision-making. There are different influences, and the theory of potency cannot effectively explain this phenomenon. Lerner and Keltner (2000) pointed out that the previous researches on emotions and decision-making are mostly based on the orientation of emotional valence. The limitation is that it is not possible to explain whether different specific emotions under the same titer have the same influence mechanism on decision-making. Based on this, an Evaluation Trend Framework (ATF) theory is proposed to explain how specific emotions influence decision making. Lerner and so on later conducted a series of studies on specific emotions and decision making based on the ATF theory. For example, Lerner and Fischhoff (2003) used 973 American citizens aged 13-88 as subjects to make risk decisions on public policies. Whether it is the emotional state induced by the experiment or the naturally occurring emotional state, the subject's estimate of risk is significantly elevated in the feared mood, whereas it is the opposite in the anger mood. In Lerner, Small, and Loewenstein's (2004) study of the effect of emotion on the endowment, a 3×2 intergroup design was conducted with emotions (neutrality, disgust, sadness) and ownership (sales, purchases) as variables. Completing the simulated asset pricing experiment found that disgust lowered the participants' asset pricing when selling or buying

options, eliminating the endowment effect, while the sad mood reduced the asset price of the goods when sold, but increased the asset price of the item at the time of purchase generates a 'reverse endowment effect'. Small and Lerner and so on (2008) found that in the simulation of welfare assistance experiments, compared with the neutral mood, the participants suggested that the aid participants should reduce the amount of the welfare amount in the anger, but in the sad mood, it would suggest an increase, while still It was found that the consumption of cognitive resources of participants could eliminate the difference in decision making under sad and angry conditions.

2. THE CONNOTATION OF THE EVALUATION TENDENCY FRAME THEORY

The evaluation tendency framework theory refers to the viewpoint of cognitive evaluation theory of emotions (Scherer, 1988; Lazarus, 1991b), and believes that using a series of cognitive dimensions to distinguish emotional experience and its influence is more effective than merely using potency to distinguish, and The study by Smith and Ellsworth (1985) argues that different emotions can be evaluated and classified using six cognitive evaluation dimensions: "certainty", "pleasure", "attention activity", "control", "expected effort" and "responsibility". Each emotion has a central dimension that expresses its core meaning and theme. This theory has been widely demonstrated in follow-up studies (Lazarus, 1991a; Betancourt & Blair, 1992). At the same time, the evaluation tendency frame theory also refers to the theory of emotional function (Levenson, 1994; Oatley & Johnson-Laird, 1996), and believes that the generation of emotions will lead to a series of physiological, cognitive, and behavioral responses. These responses ensure that individuals can deal with cases quickly. The problem. Emotion-related cognitive activities block the ongoing cognitive process and focus on cognitive activities such as memory and judgment to address emotional-induced events.

The evaluation tendency framework theory believes that different emotions can be clearly distinguished because of the different core evaluation topics. Different topics will trigger different cognitive and behavioral activities, and ultimately lead individuals to make different choices and judgments, making them at the same valence. Different specific emotions may have different effects on decision-making. Lerner and Keltner (2000) demonstrate the evaluation of propensity framework theory by comparing fears (caused by uncertain, contextual control) and anger (caused by determined, individual control) by two specific negative emotions. , And think that the theory also applies to the evaluation of other specific emotions, such as the difference between shyness and

anger in the core evaluation is mainly in the responsibility dimension, shyness more points to the self-responsibility of the commitment, and anger is more directed at the responsibility of others The difference between commitment, craving and disgust in the core evaluation is mainly in the attention dimension, the desire is to pay attention, and disgust is the avoidance of attention.

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4. NEURAL MECHANISM HYPOTHESIS OF EVALUATING TENDENCY FRAMEWORK THEORY

The evaluation of propensity framework theory attempts to find the relevant regions of the nervous system related to the evaluation function of emotions. Early studies (Shiv, 2007) proposed three possible hypotheses to explain the neural mechanism of the evaluation tendency framework theory. The first hypothesis is that hippocampus and individuals There is a close connection between the completion of the emotional evaluation function, and the hippocampus plays an important role in the early stages of information processing (especially coding of the scene), such as Davidson and so on (Davidson, Pizzagalli, Nitschke, & Putnam, 2002). In the study of depressed individuals, it is found that the reduction of hippocampal function may lead to the inability to effectively adjust and respond to emotions based on the situation, thus causing such individuals to experience continuous grief, which to some extent indicates that hippocampus may be an evaluation. An important neural basis for dimensions and core themes, which assumes that emotional evaluation can be done early in information processing. Another hypothesis is that emotional evaluation is related to prefrontal activity. When individuals are searching for tasks and searching for ways to achieve tasks, the evaluation of emotions may occur in the relevant areas of the prefrontal cortex (Miller & Cohen, 2001). Different from the first hypothesis, the second hypothesis suggests that the evaluation function of emotions is affected by factors such as cognitive load and distraction. The third hypothesis integrates the first two. It is believed that both hippocampus and prefrontal lobe participate in emotional evaluation activities, hippocampus is responsible for evaluating the activation of dimensions and core themes, and the prefrontal is responsible for subsequent decision-making and judgment activities.

5. RESEARCH ON INTER-TEMPORAL CHOICE BASED ON ATF THEORY

In the ATF theory, these specific emotions cause specific levels of cognition and motivation, which affects the individual's differences in behavioral levels. These differences are also reflected in the individual's decision-making process. For example, Lerner and Tiedens (2006) summarized the influence of anger on cognition and decision-making based on the ATF theory system. Later, some studies summarized the application of ATF theory, and believed that the previous research mainly focused

on risk assessment, economic decision-making and moral judgment. Class tasks pointed out that different emotions do have differences in the evaluation dimensions mentioned by ATF theory, and will have a specific impact on decision-making ATF theory in inter-temporal choice (Xu Fuming, Zhang Hui, Wu Xiuliang, Li Bin, Luo Hanbing, 2014). The application is still in its infancy, and the research mainly draws on the experimental design of the influence of emotion on risk decision-making. The research conclusions mostly support the assumption of ATF theory.

5.1 The Effect of Valence Sentiment on Inter-Temporal Choice Under Single-Dimensional Classification

The evaluation dimension of ATF theory has the evaluation of emotional "pleasure degree" has been founded in some researchers, while the classification based on titer is based on the dimension of this dimension. It can be considered that the classification of emotion by the theory of titer is ATF theory. A special case of emotional classification (Xu Fuming et al., 2014). For example, using "pleasure degree" as the evaluation dimension to divide emotions, and to examine the influence of positive emotions and negative emotions on inter-temporal choice, we can see that a large number of studies believe that positive emotions can make individuals pay more attention to long-term in inter-temporal choice tasks. Benefits (LL), while the arousal of negative emotions makes the participants more inclined to short-term gains (SS) (Biel, Johansson-Stenman, & Nilsson, 2011; Carte, 2011), as Ifcher and so on (Ifcher & Zarghamee, 2011) using short video as emotional induction material to stimulate the participants to generate positive emotions immediately presented 30 intertemporal preference problems, and after the task is over, randomly select a certain amount according to their answers as a return, and calculate the time discount rate of the subjects through the formula. The discovery of mild positive emotions increases the long-term benefits at current values, thereby significantly reducing the subject's time discount rate. Rounds and so on (Rounds, Beck, & Grant, 2007) used the Social Anxiety Questionnaire (SIAS) score to be a high-low social anxiety group and found that in the absence of a non-threat condition, high social anxiety was the discount rate in the intertemporal selection was significantly higher than that in the low social anxiety subjects. However, some researchers have presented different evidences. Luo, Ainslie and Monterosso (2014) used facial expressions (fear, pleasure, neutrality) as emotional material to examine subjects under different emotional frameworks (positive-negative). In the inter-temporal choice task, the behavior and brain function were correlated. It was found that compared with the happy face condition, the subjects chose the far-reaching (LL) benefit more in the intertemporal selection task under the fear face

condition. Sohn and so on (Sohn, Kim, Sohn, Seok, Choi, & Watanuki, 2015) conducted a fMRI study of emotional arousal on inter-temporal choice with Korean's students, and selected 120 in the International Emotional Picture System (IAPS). Emotional pictures were divided into 3 groups (40 of them were positive emotion pictures, 40 were positive negative emotion pictures, 40 were neutral pictures), and the participants were emotionally aroused, and found in the subsequent inter-temporal choice tasks with neutral emotions. In comparison, the arousal of strong positive-negative emotions will have an impact on inter-temporal choice, and all show more impulsive behavioral tendencies.

Because the inter-temporal choice tasks in the above research all require the subjects to choose in the emotional state, there may be differences in the emotional strength and the occupation of cognitive resources caused by different materials, which may lead to different results, and may also have state emotions. The difference in the tendency of inter-temporal choice brought about by trait emotions. At the same time, it can be found that the treatment of emotional materials (pictures, faces or videos) in experiments is only divided into positive or negative stimuli by material properties. Ignore the difference in specific emotions (intra-group differences) that may exist under the same potency or use a specific emotional material as a representative of a certain potency, ignoring the limitations of the representativeness of the material.

5.2 The Effect of Specific Emotions on Inter-Temporal Choice Under Multidimensional Classification

In the ATF theory, different emotions usually have corresponding core evaluation themes, and the emotions can be specifically divided by the differences in the core evaluation topics. The control and uncertainty of context in the evaluation dimension of fear is the core evaluation theme. Therefore, when people are in a state of fear, the inner sense of uncertainty is strengthened, and they tend to reduce the uncertainty in the environment and enhance the sense of control over the environment. She shengxiang and so on (She shengxiang, Zheng Xiaowei, Zhou Wei, Yang Wei, 2016) conducted an empirical study on the intertemporal selection of individuals under fear in their research. They used emotional video as an emotional initiation material, drawing on the intertemporal period of Kirby (1999). Decision-making experiment design, using the virtual return and real-return conditional control experiments in the experiment, the results show that both the virtual return and the true return condition have a significant impact on the inter-temporal choice behavior. Compared with the choice of neutral emotional state, the fear group is more willing to give up the greater return after the time delay, and it is more short-sighted.

In addition, Lerner 2004) based on the early ATF theoretical study that sadness increases the individual's perception of loss, making it easier to trigger implicit goals for rewards, while also pointing out that inter-temporal choice is 'current self'(that is, what I want now) and the 'future self' (that is, I will wait for more), then sadness may trigger the subject to satisfy the "current self" and lead to an increase in time discounts. The phenomenon appears (Cryder, Lerner, Gross, & Re, 2008). To further validate these hypotheses, Lerner and so on (2012) also used Kirby's (1999) inter-temporal choice experimental design to compare inter-temporal choice of subjects under sadness, disgust, and neutral emotions through three sets of experiments. Behavior, the results found that compared with the neutral and aversion group, the sad emotion group would make the participants more impatient with the intertemporal selection task, while the aversive group did not show obvious Impatience than the neutral emotion group. Tendency, this study validates the hypothesis that different negative emotions may have mechanisms of action in inter-temporal choice.

Although the application of specific emotional paradigms in inter-temporal choice research is now more reflected in the study of different negative emotions (such as fear, sadness, anxiety, etc.), it can be seen that experimental evidence does reflect different specific emotions. The participants' different behavioral tendencies reflected in the inter-temporal choice tasks, while the ATF theory can provide a possible explanation for the existence of these differences from the perspective of the core evaluation dimension.

6. CONCLUSION AND OUTLOOK

In general, the influence of emotion on decision-making has always been the focus of researchers. From the titer of titer to the paradigm of specific emotions, the study also extends from the one-dimensional evaluation of emotions to the evaluation of multi-dimensional evaluations. The decision-making relationship provides new ideas. The ATF theory expands the early valence-based emotion research, lays a foundation for studying the specific relationship between cognition and emotion, and has a good influence on the impact of emotion on inter-temporal choice. The explanatory power of the applicable intertemporal behavior research areas includes economic decision-making behavior areas: long-term investment, stock investment; health behavior areas: such as diet control, tobacco and alcohol withdrawal; public policy behavior areas: such as environmental protection investment, public welfare Issue; and so on. The ATF theory has obtained a lot of research support, but there is still a huge space for development from the ATF theory itself and the inter-temporal choice research under its theoretical framework. The future research can pay attention to the following aspects.

6.1 Integration of Risk Decision-Making and Inter-Temporal Choice

Because early decision-making research is more focused on risk decision-making tasks, its research is more in-depth and systematic. It not only discusses the impact of different specific emotions on risk decision-making but also on the influence of personality and cognition as regulatory variables, while inter-temporal choice. The research is in its infancy, and in the future, we can learn from the research paradigms and research ideas of risk decision-making to carry out follow-up research on inter-temporal choice. At the same time, there are certain correlations between risk decision-making and inter-temporal choice. Chen Haixian and He Guibing (2011) summarize the similarities between risk decision-making inter-temporal choice. They think that the models of two types of choices in traditional economics have similar structures and assumptions. For example, in the inter-temporal choice, people compare the values at two different time points according to the time discount and select them, while the risk decision people compare the subjective values under different odds with the probability discount. There are also many studies that point out that in the consideration of the final benefit, "time" itself may be regarded as a kind of risk expression, and the extension of waiting time is often accompanied by the increase of the uncertainty of the income of the participants (Benzion & Heukamp, 1989, 2012; Halevy, 2008; She, Ma, & Wu, 2010). From these two points, summarizing and comparing the behaviors and psychological mechanisms of the two decision-making tasks in different emotions can provide an empirical basis for further understanding the similarities and differences between the risk-making and inter-temporal choice mechanisms.

As Lerner and so on (2006) mentioned in the study of the influence of anger on individual cognition and risk decision-making, anger is the individual's experience of certain and controllable negative events and believes that it should be responsible for the event. The initiation of anger affects the individual's attention preference and the depth of cognitive processing. At the same time, when compared with the feared individual, it is found that the angry individual is more optimistic in the face of risk decision tasks, underestimating the level of risk, and thus prefers to choose. More risky options. It is possible to draw on the design of the experimental study, and to analyze the similarities and differences of emotions in risk decision-making and inter-temporal choice mechanisms by examining the tendency of anger individuals to choose among the tasks of inter-temporal choice.

At the same time, pure risk decision-making an inter-temporal choice are task decisions under fixed risk probability and time probability. In reality tasks, risk decision-making and inter-temporal choice may occur in combination, such as in economic decision-making and health investment. There is often uncertainty about the

likely return on investment in the future. Individuals in the face of such decision-making tasks will need to consider time, probability, value and other factors at the same time. Now many studies have conflicted the preferences of individuals under risk-based decision-making, and the research from the specific emotional perspective It is even more lacking (Keller et al. 2012). In the current research that psychology research pays more attention to real situations and tasks, the research on individual risk-based inter-temporal choice under specific emotional state will respond scientifically to many realities of social life.

6.2 Extension From Sporadic Emotions to Integrated Emotion Research

In ATF theory, Lerner and so on (2003) classify emotions into Integral Emotion and Incidental Emotion. Integrated emotions are mainly subjective experiences directly related to decision making (such as emotions generated during decision making). Or expected emotions before the expectation), incidental emotions are emotional experiences that are not triggered by decision-making (such as the emotional experience generated by emotional initiation in experimental control), and empirically, both emotions have an impact on the decision-making process or outcome, but Because sporadic emotions are more likely to be effectively controlled in research, and thus more able to examine the relationship between observational emotions and decision-making, a large number of researchers now choose to use the emotional initiation paradigm to study inter-temporal choice tasks under specific occasional emotions. Such research often requires continuous presentation of emotional initiation experiments and inter-temporal choice tasks to ensure that the subjects are in the expected emotional arousal state when completing the inter-temporal choice tasks. This design is controlled by time in multiple consecutive experiments. There are limitations. Therefore, research on decision process emotion, that is, integrated emotion, can be added to the design, and the influence mechanism of specific emotions in multiple inter-temporal choice tasks can be investigated, as well as post-decision emotions for inter-temporal choice. Influencing research, examining the positive or negative outcomes of a decision, triggers a specific emotion of the decision maker and its impact on subsequent decision tasks.

6.3 Emotional Specificity and Inter-Temporal Choice Research

Most of the existing inter-temporal choice studies only examine the inter-temporal choice preferences of normal groups under different emotional states at the behavioral level. The effects of different emotions on inter-temporal decision-making tasks have been initially verified, but studies have further pointed out different emotions. The mechanisms that influence the specificity of cognition and decision-making tasks, such as Ding Daoqun and so on (Ding Daoqun, Zhang Xiangyi, 2013), found that different

emotions may only affect certain moral judgment tasks due to differences in their core evaluation dimensions. And suggest further exploration of the intrinsic psychological mechanism of evaluation of propensity and specific effects in subsequent studies. As Pulcu and so on (Pulcu, Trotter, Thomas, Mcfarquhar, Juhasz, & Sahakian, 2014) and Takahashi (2008) have found that depression and impulsivity show a significant positive correlation, which may be related to depression. The patient's brain function (such as changes in the serotonin levels of the nervous system) is closely related, making depression patients more sensitive to negative events that may occur in the future, triggering impulsive behavior and higher latency. Discount level. The study by Augustine and Larsen (2011) found that personality (the neurotic dimension) and the main effects of emotions and their interactions can better predict the predictive rate of the subjects, which means that the individual's stable nervous system characteristics also affect its inter-temporal choice. An important factor in propensity. These studies can be used as evidence for the neuropsychological mechanism of ATF theory, and indicate that different emotions may have specific effects on intertemporal selection tasks, and further explore the core evaluation dimensions of different states and trait emotions by means of neurocognitive science research methods. The differences in neuropsychological mechanisms and their impact on different inter-temporal choice tasks are important directions for the further development and deepening of ATF theory.

6.4 Study on the Impact of Specific Emotions on Time Perception

inter-temporal choice is a decision-making variable for the trade-off of income at different time points. Time is an important study variable, so researchers have carried out a series of studies on the impact of time perception and perception on inter-temporal choice (Suo Tao, Zhang Feng, Zhao Guoxiang, Li Hong, 2014; Tao Anqi, Liu Jinping, Feng Tingyong, 2014). The individual's perception of time is influenced by many factors inside and outside, which may cause some difference between subjective time interval and physical time interval. Emotional state is one of the important factors, such as Wang Peng and Liu Yongfang (2009). Studying the influence of emotion on inter-temporal choices, it is found that happiness and sadness have different effects on individual's temporal distance sensitivity and inter-temporal choice tendency, and the difference in the level of individual representation of event characterization under different valence emotions It is explained, and if the classification is based on the core evaluation dimension, the two different valency emotions of happiness and anger have high similarity in the two evaluation dimensions of "determinism" and "controlness", then according to the ATF theory. The frame, the level of time perception of individuals under happy and angry emotions and their

influence on inter-temporal choice should be similar, which is obviously conflicted with the hypothesis of titer theory, which needs further research to prove. At the same time, Li Aimei and others (Li Aimei, Sun Hailong, Xiong Guanxing, Wang Xiaotian, Li Bin, 2016) put forward the feeling of "time poverty thinking" in their research and built a model of the influence of time cognition and emotion on inter-temporal choice. Individuals in a time-poor state are prone to "time-poverty thinking" and influence the inter-temporal choices from the two paths of cognition and emotion and their interactions. This study is to explore the positive effects of emotion and time perception on inter-temporal choice. Exploration, but its research is still in the theoretical structure stage and needs more empirical research support.

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