

Research on the Mechanism of Emotional Contagion in the Circumstance of Job Failure Based on Attribution Theory

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Abstract—A inter-group scenario simulated experiment is adopted to investigate the influence of failure attribution and leaders' affective feedback on members' angry and frustration. Subjects are divided into eight groups based on four failure attributions and two affective feedbacks. The results show that, under failure circumstance at work: (1) affective feedback from leaders positively influences the members' emotions of anger and frustration. (2) Different failure feedback will influence the frustration of members. (3) Different attributions of failure have different effects on members' anger at two levels of affective feedback from the leader. The study took both failure attributions and affective feedback into consideration and enriched the study of impact of attribution on emotions.

Keywords—failure attributions; affective feedback; emotion

I. INTRODUCTION

In recent years, a "emotional revolution" has been set off in the field of psychology, organizational behavior etc. with emotion in the organization being the hot research topic. With the development of leadership research within organizations, most researchers focus on the exploration of leaders' own personality, emotional intelligence and leadership styles, while the interpersonal interaction between leaders and their members is ignored. In fact, playing the leading role is largely dependent on the emotional contagion between leaders and members [4,7,10,15,24]. Visser et al. (2013) found in their study that a leader's displays of happiness enhanced followers' creative performance. In addition, happy leader displays yielded higher leadership effectiveness ratings than neutral leader displays, and sad leader displays yielded lower leadership effectiveness ratings, all mediated by follower's happiness [23]. Through meta-analysis, Joseph et al. (2015) found that there was a positive correlation between positive emotion of the leaders and their competence in leadership while the negative emotion of the leaders was negatively correlated with their competence in leadership [11]. Little, Gooty and Williams (2016) found that the leaders emotional management affected members' LMX and job satisfaction [13]. Trichas et al. (2017) found that happy emotions of leaders resulted in higher leadership ratings, higher trait ratings, greater correlations among trait ratings, and greater dependence of trait ratings on leadership perceptions [21]. Sy, Horton and Riggio (2017) presented a model that situated emotion as the primary

variable in the charismatic process. They used recent research on the moral emotions to frame a theory of followership-relevant emotions (FREs) that described how leaders used emotions such as compassion, admiration, and anger to compel their followers to act [20].

In recent years, researchers begin to study the emotional relationship between leaders and members.

Leaders' emotions could directly affect the affective condition of individual members or even the entire team through emotional contagion (Bhullar, 2012) [3]. Van Kleef et al. (2009) pointed out that the positive emotional contagion from leaders, compared with negative emotions, could contribute to a positive emotional reaction in members and achieve better team performance [22]. Longitudinal study by Sy, Choi and Johnson (2013) showed that there was a positive correlation between the expression of leaders and positive emotions in an organization. A negative correlation was found between negative emotions in an organization and the effectiveness of leaders. Leadership played a mediating role in moderating the emotion of the team [19]. However, only a small number of scholars have studied the influence of leadership on the specific emotions of members [12], and the amount of researcher who studies the influence of leadership on members under specific circumstances is even fewer.

One of the most common circumstances in an organization is members' job failure. Job failure doesn't mean poor performance. Its definition covers a broad meaning. Any results which are deviated from the expectation in work can be called a job failure [6]. On the one hand, according to attribution theory, people have different attributions to different failure scenarios, which lead to different attitudes toward failure and affect people's emotions. If failure is attributed to something that can be controlled, such as lack of effort, we will feel guilty. If failure is attributed to inherent, stable and uncontrollable factors, such as lack of ability, we will feel ashamed and embarrassed. On the other hand, according to affective events theory, affective events will affect members' emotion and mentality and will result in emotional reaction, positive or negative. Different emotional reaction will influence members' work attitude and action [8]. Members' job failure can be seen as emotion inducing event, which will ultimately stimulate leaders' emotion. Considering the influence of members'

failure attribution, would the influence of leaders' affective feedback on members' emotion be the same?

In the previous studies of failure feedback, researchers found that leaders who showed negative emotions got a lower rating on leadership efficiency and team performance, compared to leaders who showed positive emotions (Gaddis,2004) [9]. However, the extant researches haven't figured out the mechanism in which affective feedback influences the performance of members. And there isn't any standard scale for measuring affective feedback of leaders.

Through reviewing the extant research, we find that despite the achievements produced by researches, there are still some areas that need to be improved, such as research on the impact of leaders' emotion expression on members in specific situations (e.g., job failure), research on members' performance in response to leader's emotion expression, research on members' performance influenced by leaders' emotion expression and research on specific emotion of members. Against this background, this essay focuses on the research on the influence of leaders' emotion in specific circumstances and explores the issue from the perspective of interpersonal interaction, which is of great theoretical significance.

First, this essay discusses the relationship between variables, namely emotion at workplace, failure attribution and leader's affective feedback. Then, we design a 4x2 inter-group scenario simulated experiment to study the influence of leader's affective feedback and members' failure attribution on the generation of emotions such as anger and frustration of members.

II. THEORY AND HYPOTHESIS

A. Leaders' Affective Feedback and Members' Emotion

Many researches about the affective relationship between leaders and members find that there is an affective bond between leaders and members. Leaders' emotion would be passed to members through emotional contagion (Bono & Ilies,2006; Ilies et al.,2007) [4,10]. The positive emotions of leaders will affect members' positive emotions, and the negative emotions of leaders will lead to the members' negative emotions.

In general, people will have negative emotions such as frustration, sadness, anger and disappointment, when confronted with negative events. Brown and Dutton(1995) et al. found that people had emotions like anger, frustration and guilt when they experienced setbacks [5]. Other researches of failure feedback showed that members' emotions were directly or indirectly influenced by the emotions displayed by their leaders.

Failure feedback is often accompanied by members' anger and nausea because the harsh criticism of leaders makes them feel angry and nervous (Baron,1990) [1]. When members notice angry emotion of leaders, they will feel nervous and when leaders become angry, they will feel down (Lewis,2000) [12].

The objects of this study are members' emotions like anger and frustration. Based on the view that leader's positive emotions affect members' positive emotions and leader's

negative emotions result in members' negative emotions, this paper proposes the following hypothesis.

Hypothesis 1a. The affective feedback of leaders influences the degree of members' anger. The more negative the leaders' emotion is, the higher the degree of members' anger is. The more positive the leaders' emotion is, the lower the degree of members' anger is.

Hypothesis 1b. The affective feedback of leaders influences the degree of members' frustration. The more negative the leaders' emotion is, the higher the degree of members' frustration is. The more positive the leaders' emotion is, the lower the degree of members' frustration is.

B. Attribution of Job Failure and Members' Emotion

According to attribution theory, in face of the same result, different attributions lead to different emotions. In Weiner's success and failure attribution theory, he points out that if failure is attributed to something that could be controlled, such as deficiency in effort, we will feel guilty, and if failure is attributed to inherent, stable and uncontrollable factors, such as inefficiency of ability, we will feel ashamed and embarrassed. Weiner also lists some emotions caused by various failure attributions. But he doesn't compare these emotions in different attributions.

Based on previous studies, this study argues that different failure attribution will influence the anger and frustration of members.

Hypothesis 2a. Failure attribution significantly influences the degree of members' anger.

Hypothesis 2b. Failure attribution significantly influences the degree of members' frustration.

C. Attribution of Job Failure, Leaders' Affective Feedback and Members' Emotion

In previous studies, researchers often separately consider the influence of leaders on members' emotions and only a small part of studies discuss the impact of feedback on members under failure circumstance [9]. However, these studies do not combine attribution theory with leadership theory to discuss the interaction between attribution and leaders' emotion.

In terms of the source of anger, Berkowitz argues in his study of aggression that anger is caused by specific behaviors [2]. When exploring reasons and stimulating factors for anger, researchers believe that when individuals experience trouble, injustice, prejudice, rudeness and insult, or faced negative event such as threat of self-esteem or damage to mind, they will become angry.

This study speculates that, when the member attributes failure to job difficulty, it indicates that he believes the failure is not caused by himself. If the leader shows negative emotion, he may think the leader is biased against him and feel unfair and angry. If the leader shows positive emotion, he may think that, from the view of the leader, the member himself shouldn't be responsible for the failure, so he won't be angry. Based on

what is mentioned above, this paper proposes the following hypothesis.

Hypothesis 3a. Faced with the positive emotions of leaders, compared with other attributions, the members who attribute the failure to job difficulty are less likely to become angry.

Hypothesis 3b. Faced with the negative emotions of leaders, compared with other attributions, the members who attribute the failure to job difficulty are more likely to become angry.

Weiner found that people were unwilling to attribute the failure to themselves because of the self-service deviation. When people attributed failure to ability, their self-efficiency decreased, resulting in feelings of depression and distraction. If employees attributed job failure to some stable, inherent and integrate reason, they would become frustrated and reduce effort and job performance [17]. If leaders couldn't give them enough support now, they would become even more frustrated [14]. Therefore, this study proposes:

Hypothesis 4a. Faced with the positive affective feedback of leaders, there is no significant difference in the frustration experienced by members who attribute failure to ability compared with the other attributions.

Hypothesis 4b. Faced with the negative affective feedback of leaders, compared with other attributions, the members who attribute the failure to ability are more likely to become frustrated.

III. METHOD

This study takes the method of simulation experiment. A 4 (failure attribution: internal/external × stable/unstable) × 2 (affective feedback: positive/negative) between subject design was used in this study with working scenario simulation set to control the condition. The influence of leaders' affective feedback and failure attribution on members' emotions of anger and frustration are examined using working scenario simulation in a field experiment.

A. Pre-test

Before the formal experiment, this study conducted a pre-test on the failure scenarios of different attributions and two kinds of affective feedback with 20 participants joining the pre-test. Participants first read four failure scenarios, then used five-scored scale to rate the reasons why the task failed in each scenario. The reasons are categorized as effort, ability, job difficulty and luck. Next, the participants read two kinds of affective feedback and used five-scored scale to rate the positive and negative level of each feedback. The grading is conducted in Likert Scale with level 1 to level 5. After grading, this study tested the mean differences with ANOVA and T-Test (independent samples). Table I and Table II display the results of pre-test.

TABLE I. PRE-TEST RESULTS OF ATTRIBUTIONS

Failure Scenarios	Attributions of job failure	Mean	P-value of ANOVA test	P-value of LSD test
Lack of effort	Lack of effort	4.80	0.000*	0.000*
	Lack of abilities	1.60		0.000*
	High-difficulty job	1.30		0.000*
	Lack of luck	1.50		0.000*
Lack of abilities	Lack of effort	1.10	0.000*	0.000*
	Lack of abilities	4.60		0.000*
	High-difficulty job	3.00		0.000*
	Lack of luck	1.20		0.000*
High-difficulty job	Lack of effort	1.20	0.000*	0.000*
	Lack of abilities	1.95		0.000*
	High-difficulty job	4.90		0.000*
	Lack of luck	1.45		0.000*
Lack of luck	Lack of effort	1.20	0.000*	0.000*
	Lack of abilities	1.45		0.000*
	High-difficulty job	1.30		0.000*
	Lack of luck	4.65		0.000*

*. The mean difference is significant at the 0.05 level.

TABLE II. PRE-TEST RESULTS OF AFFECTIVE FEEDBACK

Failure Scenarios	Feedback Scenarios	Mean	P-value of Levene test	P-value of Independent Samples T test
Positive level	Positive	3.10	0.655*	0.000*
	Negative	1.45		0.000*
Negative level	Positive	1.40	0.758*	0.000*
	Negative	4.15		0.000*

*. The mean difference is significant at the 0.05 level.

Table I indicates that participants show significant difference for four scenarios of failure attributions, which could be also proved by the mean value of the third column. In addition, the result of LSD test demonstrates that every attribution is significantly different from other three scenarios. According to Table II, scores shows notable differences for positive and negative affective feedback. On the whole, the scenarios above serve the purpose of this paper.

B. Questionnaire and Data Collection

The questionnaire in this study is divided into three parts and eight versions. The first part is scenario simulation, including two scenarios of job failure and affective feedback. The second part is the PANAS scale, invented by Watson et al in 1988 and translated into Chinese by Zuoji Zhang in 2005 [25]. The Cronbach's Alpha coefficients of positive emotion scale and negative emotion scale of PANAS scale in this study are 0.861 and 0.844, proving that the scale is well reliable. The third part was the basic personal information. The study collected 298 valid questionnaires from people with working experience in Chengdu, Beijing, Shanghai, Guangzhou and other places. Sample basic information is shown in Table III.

TABLE III. THE SAMPLE CHARACTERISTICS (N=298)

Variables	Classification	Frequency	Rate(%)
Gender	Male	118	39.6
	Female	180	60.4
Age	<=25	56	18.8
	26-35	180	60.4
	36-45	51	17.2
	>45	4	1.3
	Missing value	7	2.3
Years of working	<=3	75	25.2
	4-13	170	57.0
	14-23	38	12.8
	>23	4	1.3
	Missing value	11	3.7
Education level	High school or below	5	1.7
	Junior college	22	7.4
	Bachelor	206	69.1
	Master or above	65	21.8

IV. ANALYSIS

This study analyzed collected data by SPSS 19.0 and got mean value and standard deviation of members' emotions shown in Table IV. Accordingly, lower score stands for less frustrated and angry and higher score stands for more frustrated and angry. Table IV could preliminary prove that the difference of mean value is consistent with hypothesis 1a and 1b.

TABLE IV. THE SCORES OF MEMBERS' EMOTIONS IN EACH EXPERIMENTAL CONDITION

Mean (SD)		Attribution of job failure			
		Ability	Effort	Job difficult y	Luck
Anger	Positive	1.95(.872)	1.80(.868)	1.71(.805)	2.22(1.004)
	Negative	2.91(1.011)	2.89(.919)	3.47(.696)	3.03(.870)
Frustration	Positive	3.35(1.068)	3.11(.993)	2.57(.859)	3.08(1.090)
	Negative	3.71(1.045)	4(.676)	3.61(.871)	4.09(.830)

By using affective feedback as independent variable and anger score as dependent variable, the analysis of variances shows that: $F=122.491$, $R^2=0.310$, $p=0.000<0.01$. This illustrates that there is a significant difference in the degree of members' anger under the different attribution scenarios, thus, combined with Table IV, hypothesis 1a—leaders' affective feedback positively influences the degree of members' anger, is supported. By using affective feedback as independent variable and frustration score as dependent variable, the analysis of variances shows that: $F=54.625$, $R^2=0.189$, $p=0.000<0.01$. This demonstrates that there is a significant difference in the degree of members' frustration under the different attribution scenarios, hence, combined with Table IV, hypothesis 1b—leaders'

affective feedback positively influences the degree of members' frustration, is supported.

To test the influence of failure attributions on the emotions of members, the data was analyzed by using One-Way ANOVA and LSD test, there of reaching the results in Table V.

TABLE V. SUMMARY OF ONE-WAY ANOVA AND LSD (INDEPENDENT VARIABLE: FAILURE ATTRIBUTIONS)

Dependent variable	df	Mean Square	F	Sig.	R ²	LSD
Anger	3	0.794	0.699	0.553	0.029	
Frustration	3	4.602	4.461***	0.004	0.08	1>3,2>3,4>3

***. The mean difference is significant at the 0.01 level.

Note: 1=attribution to effort (internal×unstable), 2=attribution to ability (internal × stable), 3= attribution to job difficulty (external×stable), 4=attribution to luck (external×unstable).

After testing whether the mean value of members' anger would show significant difference under different failure attributions, this study turns out that: $F=0.699$, $R^2=0.029$, $p=0.553>0.05$. It shows that failure attributions have no significant effect on members' anger, so hypothesis 2a is not supported.

The variance test results of failure attributions and members' frustration display that: $F=4.461$, $R^2=0.080$, $p=0.004<0.01$. It indicates that failure attributions significantly affect members' frustration. Meanwhile, the results of LSD test demonstrate that members have a lower degree of frustration when they attribute failure to job difficulty compared to other attributions. Hypothesis 2b is supported.

To test the influence of interaction between affective feedback and failure attributions on the emotions of members, the data was analyzed by using One-Way ANOVA and simple effect test. This study used SYNTAX programming in SPSS19.0 to test simple effect. Table VI displays the results of One-Way ANOVA and Table VII and Table VIII display the results of simple effect test.

TABLE VI. THE RESULT OF ONE-WAY ANOVA (INDEPENDENT VARIABLE: AFFECTIVE FEEDBACK×FAILURE ATTRIBUTION)

Dependent variable	df	Mean Square	F	Sig.	R ²
Anger	3	2.796	3.598*	.014	.344
Frustration	3	2.048	2.31^	.077	.212

*. The mean difference is significant at the 0.05 level.

^. The mean difference is marginal significant between 0.05 and 0.08 level.

TABLE VII. TEST OF SIMPLE EFFECT (DEPENDENT VARIABLE: ANGER)

Effect of variable	df	Mean Square	F	Sig.	LSD
AF WITHIN FA ₁	1	21.042	27.063***	.000	AF ₁ >AF ₂
AF WITHIN FA ₂	1	18.926	24.342***	.000	AF ₁ >AF ₂
AF WITHIN FA ₃	1	59.905	77.048***	.000	AF ₁ >AF ₂
AF WITHIN FA ₄	1	11.717	15.070***	.000	AF ₁ >AF ₂
FA WITHIN AF ₁	3	2.633	3.387*	.019	FA ₃ >FA ₁ , FA ₃ >FA ₂ , FA ₃ >FA ₄
FA WITHIN AF ₂	3	1.839	2.365^	.071	FA ₃ <FA ₁ , FA ₃ <FA ₂ , FA ₃ <FA ₄

*. The mean difference is significant at the 0.05 level.

***. The mean difference is significant at the 0.01 level.

^. The mean difference is marginal significant between 0.05 and 0.08 level. The same below.

Note:

FA₁=attribution to effort (internal>unstable), FA₂=attribution to ability (internal>stable), FA₃=attribution to job difficulty (external>stable), FA₄=attribution to bad luck (external>unstable).

AF₁=negative affective feedback, AF₂=positive affective feedback.

AF WITHIN FA₁=the comparison of affective feedback on the level of attribution to effort, AF WITHIN FA₂=the comparison of affective feedback on the level of attribution to ability, AF WITHIN FA₃= the comparison of affective feedback on the level of attribution to job difficulty, AF WITHIN FA₄=the comparison of affective feedback on the level of attribution to luck, FA WITHIN AF₁=the comparison of failure attributions on the level of negative affective feedback, FA WITHIN AF₂=the comparison of failure attributions on the level of positive affective feedback.

The same below.

TABLE VIII. TEST OF SIMPLE EFFECT (DEPENDENT VARIABLE: FRUSTRATION)

Effect of variable	df	Mean Square	F	Sig.	LSD
AF WITHIN FA ₁	1	13.922	15.700***	.000	AF ₁ >AF ₂
AF WITHIN FA ₂	1	2.205	2.487	.116	
AF WITHIN FA ₃	1	20.954	23.630***	.000	AF ₁ >AF ₂
AF WITHIN FA ₄	1	17.973	20.268***	.000	AF ₁ >AF ₂
FA WITHIN AF ₁	3	1.887	2.128	.097	
FA WITHIN AF ₂	3	4.556	5.138**	.002	FA ₂ >FA ₃

In Table VI, the interaction between affective feedback and failure attributions has marginal significant effect on the frustration of members ($F=0.014$, $R^2=0.344$, $p=0.014<0.05$). Table VII proves how this interaction affects members' anger by testing simple effect ($F_{FA1}=27.063$, $p<0.01$; $F_{FA2}=24.342$, $p<0.01$; $F_{FA3}=77.048$, $p<0.01$; $F_{FA4}=15.070$, $p<0.01$), thus the simple effect of affective feedback has significantly influence on four kinds of failure attributions and the mean value of anger in negative group is higher than that in positive group. The testing result of simple effect of failure attribution on positive and negative affective feedback ($F_{AF1}=3.387$, $p<0.05$; $F_{AF2}=2.365$, $p>0.05$) illustrates that the simple effect of failure attribution has significant influence on negative affective feedback and marginal significant influence on positive affective feedback. The testing result of LSD supports hypothesis 3a and hypothesis 3b, that is to say, faced with leaders' positive emotions, compared with other attributions, members who attribute the failure to job difficulty are less likely to become angry, and faced with the negative emotions of leaders, compared with other attributions, members who attribute the failure to job difficulty are more likely to become angry.

Table VI shows the interaction between affective feedback and failure attribution has influences on members' frustration but the effect was not significant ($F=2.31$, $p=0.077>0.05$). Similarly, using simple effect to test how the interaction influences members' frustration, the results which are displayed in Table VIII ($F_{FA1}=15.700$, $p<0.01$; $F_{FA2}=2.487$, $p>0.01$; $F_{FA3}=23.630$, $p<0.01$; $F_{FA4}=20.268$, $p<0.01$) show that the simple effects of affective feedbacks on failure attribution are not all significant. Besides, the simple effects of failure attributions on affective feedback are not all significant ($F_{AF1}=2.128$, $p>0.05$; $F_{AF2}=5.138$, $p<0.01$). At the level of negative affective feedback, the mean difference among the four failure attributions is not significant, which supports hypothesis 4a. At the level of positive affective feedback, the mean difference of frustration between attribution to ability and job difficulty is significant. When the job failure is attributed to ability, compared to job difficulty, the frustration is much higher. But there is no significant difference among the failure attributions of ability, effort and luck. Hypothesis 4b is not supported.

V. CONCLUSIONS

Through the analysis above, we believe that the study's theoretical contributions are as follows:

First, the results of this study support the view that emotions can be transmitted between leaders and members, and elaborate the study on the effect of leaders' positive and negative emotions on members. Previous researches focused more on overall emotion like positive or negative emotions, ignoring specific emotions. This paper tests the effect of leaders' emotions on members' anger and frustration and turns out that the more negative the leaders' emotion is, the higher the degree of members' anger and frustration is and the more positive the leaders' emotion is, the lower the degree of members' anger and frustration is.

Second, this paper enriches the study of impact of attribution on emotions. This study finds that the different attributions of job failure can affect members' frustration. Even though Weiner's research finds that different attributions for the same case could result in different emotions of members, he does not compare the differences among attributions. Therefore, this paper compares the effects on the same emotion of different attributions and finds that the much difficulty of job would cause less frustration than other attributions do.

Third, both failure attributions and affective feedback have been taken into consideration. Few previous researches focused on the effect of interaction between failure attribution and affective feedback on members' anger and frustration. This study finds that different attributions of failure have different effects on members' frustration at two levels of leaders' affective feedback.

Through the analysis above, we believe that the study's practical contributions are as follows:

First, faced with members' job failure, leaders should take suitable affective feedback according to the specific problems. In general, leaders show positive affective feedback to the results they appreciate and give negative affective feedback to

the unsatisfactory results. However, it may not be a good way to play the leading role. This paper finds that faced with the negative affective feedback of leaders, compared with other attributions, members who attribute the failure to ability are more likely to become frustrated, and members who attribute the failure to job difficulty are more likely to become angry. So, the choice of positive or negative affective feedback must be based on the specific circumstances.

Second, enterprises should carry out more emotional leadership related training activities to improve leaders' ability of emotion judgement and expression under special circumstances. Not every leader is born with good ability of emotional expression and judgement. Therefore, it's important to train the emotional leadership.

The limitations of the study are as follows:

First, the quantity of sample is not enough. Since the questionnaire is divided into 8 versions, the average number of samples of per version is less than 40, which may affect the results.

Second, the study lacks external validity. Scenario simulation makes the control of the research easier, and avoids the participants to answer questions in accordance with memory, resulting in deviations from the actual situation [18], whereas it loses the external validity. The conclusion of this study may not be consistent with that in practice.

For future research, the comparison of Chinese and foreign members' emotions can work as the research point, and more focus could be put on the influence of negative affective feedback on the positive emotions.

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