

## Preliminary Compile and Evaluation of Emotional Film Material

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### Abstract

To provide a set of native and standardized video stimuli materials for emotional study. Method: on the basis of length intelligibility and discreteness 30 video clips which attempt to elicit each of 5 emotional states(anger fear sadness disgust and happiness) were selected from 30 collected diversiform video clips. Then 60 Chinese university students rated the arousal emotion valence and discreteness of video clips by self-reported scales including the scale of the emotional arousal, the intensity and valence, and the Positive and Negative Affect Scale(PANAS).Results: All of the 5 emotional video categories elicited strong emotion reactions and the negative emotion were stronger than the positive . Finally 20 specific criteria which would be chosen by researchers were established. Conclusion: These video clips which elicit strong and different emotional reactions can provide normalized stimulant materials for research in emotion. Further studies are needed to improve the quality of the native affective video system.

**Key words:** emotion; video system; Compile

### 1. Introduction

As emotions become research focus in the field of psychology and neuroscience, the means of inducing emotions are more and more.

At present, in the lab, the means of inducing emotions mainly include: the interactive training, hypnosis, retelling, facial muscle movement, images, music, slides, video, etc<sup>[1-2]</sup>. The ecological validity of method and select effective trigger material is the key problem to inducing mood. And inducing emotions by video clips is regarded as a method with higher ecological validity. As a result, the researchers also more and more tend to use footage as materials of emotions induced in a study<sup>[3-6]</sup>.

For the sake of solving this problem, Foreign researchers compiled with different selections of standard material through quantitative evaluation of emotional images<sup>[1-2]</sup>. Domestic researchers also compiled some the mood of the video material for the researchers to use through the standardization of quantitative evaluation<sup>[7-8]</sup>. But established foreign emotional footages were mostly from western films, and the east and the west exist differences between language, culture and other aspects.

Due to emotional reactions under the influence of social learning experience, individuals under the different culture background, when facing the same emotional stimuli, can produce different experience.

In addition, the subjects of personality, social life experience will cause different subjective emotional experience differences<sup>[8]</sup>, the time of emotions induced of different

individual of may be different, even the length of the film clips that may induce emotions may be different. Researchers generally use different group of participants, there exist certain differences in themselves, therefore, to ensure the reliability and validity of material, it is necessary to compile a set of emotional video system through quantitative assessment procedures, and suitable for the specific scope of subjects group.

## **2. Participant and methods**

### **2.1 The preparation of emotional movie file**

Footage collected: 5 kinds of footage including fear, disgust, anger, joy and sadness that were collected from the team, the fans and critics BBS and part of the college students' group, widely selection, were edited for the unified format video files. Next try to use collect movie clips, facilitate subsequent video material collection and selection.

Footage screening: reference to Gross method of quantitative evaluation of movie clips to strict screening of the video. With college students as subjects, video system was subjective assessed, and selected target emotion induced by high intensity video, and verified its effect.

Finally choose emotional video materials induced fear, disgust, anger, happiness and sadness, by adopting the self report method to observe participants characteristics of emotional reaction.

By the team members, according to three attributes, namely the length - relatively short, understandability, the footage target induced by emotions, including fear, disgust, anger, happiness and sadness of 5), the purity of filtered to collect 40 footage, finally confirmed 30 clips.

All video clips are from domestic films or non-commercial video images, including historical films and contemporary films in proportion of 2:13, the content including the affection, love, war, etc., all pieces have the characters facial expressions and scene.

### **2.2 Rating the image file**

#### **2.2.1 Participant**

60 NanTong university students are recruited by applying for campus post on BBS, and participate in this experiment.

Of all Participant the boy of 24, 36, age 19 to 23 years old, the average ( $21 \pm 1.90$ ) years old, healthy body. by the self-assessment lists of Symptom, Symptom Checklist 90, SCL - 90), State - Trait Anxiety questionnaire (State - Trait Anxiety Inventory, STAI) , Beck Depression questionnaire (Beck 'Inventory, BDI), all Participant were checked no obvious emotional problems and mental illness. Before experiment informed them experiment content, and signed informed consent, and pay a reward after the experiment.

#### **2.2.2 Video materials**

30 video clips to trigger 5 kinds of emotions (fear, disgust, anger, happiness, sadness,), each type of 6 emotion video clips, the length of 60 ~ 500 s, 220 s average.

#### **2.2.3 Measures**

For arousal, Referring to emotional stimuli system establishment method<sup>[9-13]</sup> used by past research and research of Schaefer and Gross, using self-reported nine rating scale

method, the subjective emotional intensity was assessed.

While watching the film, the more emotional, score the more close to 4, the less intense, score the more close to zero, Such as: "when you're watching this fragment, 0 = did not produce any mood, 4 = produced strong emotions".

For emotional valence, Positive Negative emotion scale (Positive and Negative Affect Schedule, PANAS) were used to assess.

#### 2.2.4 Experimental program

The Participant take part in the experimental group, but on their own computer headphones on independent watch clips, fill out the questionnaire.

Computers were 17 in flat display, frequency 75 hz, the resolution of 1024 x 768 pixels.

Images fragment presented with Presentation software, and 5 types of emotional fragments in random, but the same emotional types of fragment presents two consecutive times at most.

Before the start of each segment, the participants relax the 30 s, after the fragment, and fill out the questionnaire. Participants are asked to report the actual feeling after watching this segment, rather than after watching the clip should be feeling. Each participant watch all the pieces.

#### 2.2.5 Statistical methods

SPSS18.0 was Used for the analysis of variance analysis. The score of arousal and PANAS of 5 (emotions: fear/hate/happy/sad/angry), were respectively done analysis of variance. Among them, the emotional type is variable in subjects; The emotional arousal and valance induced by the footage were assessed. Scores on the PANAS, calculating the Cloning Bach alpha coefficient, aims to assess each emotion consistency between six footage.

### 3. Data Analysis and Results

#### 3.1 Evaluation of Strength, arousal, valence, positive and negative

##### 3.1.1 The mean and standard deviation of strength, arousal, valence, positive and negative

The intensity, arousal and valence of 5 kinds of emotions video clips, were subjectively evaluated grade 9 points, then the mean and standard deviation of intensity, arousal and valence of the each emotion, are shown in table 1.

Table 1: Mean and the standard deviation of strength, arousal, valence, positive and negative

mood	Mean (intensity)	Standard Deviation (intensity)	Mean (arousal)	Standard Deviation (arousal)	Mean (valence)	Standard Deviation (valence)	Mean (positive)	Standard Deviation (positive)	Mean (negative)	Standard Deviation (negative)
happy	5.74	1.35	4.51	2.02	5.84	1.43	26.33	4.95	11.54	2.60
anger	7.08	1.70	6.78	1.77	1.86	1.56	15.86	4.87	26.68	5.29
fear	6.39	1.64	6.15	1.85	1.90	1.38	14.63	4.63	25.41	4.28
hate	6.41	1.62	6.12	1.84	1.87	1.46	15.67	5.16	24.87	4.18
sad	5.88	1.49	5.47	1.69	2.54	1.71	16.73	6.01	21.84	3.02

total	6.30	1.63	5.81	1.99	2.80	2.16	17.84	6.70	22.07	6.79
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### 3.1.2 Variance analysis of intensity, arousal and valence

Emotional type as the independent variable, the intensity, arousal and valence of 5 kinds of emotions video clips were tested by one - way ANOVA. The results are shown in table 2.

Table 2: Variance analysis of intensity, arousal and valence

Variable	Sum of squares	df	mean square	F	Sig.
intensity	391.14	4	97.79	39.91**	.000
				*	
arousal	1031.46	4	257.87	76.23**	.000
				*	
valence	4134.99	4	1033.75	451.26*	.000
				**	
positive	32115.92	4	8028.98	303.24*	.000
				**	
negative	52640.65	4	13160.1	827.09*	.000
			6	**	

Note: the figures in this table are the results of the analysis of variance of F value;  
\*\*\* indicates significant at the level of .001.

The table 2 shows that for the intensity of the emotional movie ( $F = 39.91, P < 0.001$ ), arousal ( $F = 76.23, P < 0.001$ ), valence ( $F = 451.26, P < 0.001$ ), positive ( $F = 303.24, P < 0.001$ ), negative ( $F = 827.09, P < 0.001$ ), main effects of emotional type are significant.

### 3.1.3 Multiple comparison of different emotional intensity and the degree of arousal and valence

The emotional intensity, arousal and valence were used respectively by the LSD method to carry on the multiple comparison, the results are shown in table 3.

Table 3: Emotional intensity, arousal and valence of multiple comparison

Emotion type	Mean Difference (intensity)	Mean Difference (arousal)	Mean Difference (valence)	Mean Difference (positive)	Mean Difference (negative)
Happiness - anger	-1.34*	-2.27*	3.98*	10.47*	-15.15*
happiness -Fear	-.64*	-1.64*	3.94*	11.70*	-13.87*
Happiness - disgust	-.67*	-1.62*	3.97*	10.66*	-13.33*
Happiness-	-.14	-.97*	3.31*	9.60*	-10.31*

sadness					
Happy-anger	1.34*	2.27*	-3.98*	-10.47*	15.15*
Anger-fear	.69*	.63*	-.04	1.23*	1.27*
Anger - disgust	.68*	.66*	-.01	.19	1.82*
Anger-sadness	1.21*	1.31*	-.68*	-.87*	4.84*
Fear-happiness	.64*	1.64*	-3.94*	-11.70*	13.87*
Fear-anger	-.69*	-.63*	.04	-1.23*	-1.27*
Fear - disgust	-.02	.03	.032	-1.04*	.54
Fear-sadness	.51*	.68*	-.64*	-2.10*	3.57*
disgust -Happy	.67*	1.62*	-3.97*	-10.66*	13.33*
Disgust - anger	-.68*	-.66*	.01	-.19	-1.82*
disgust -Fear	.02	-.03	-.03	1.04*	-.54
Disgust - sad	.53*	.65*	-.67*	-1.06*	3.03*
sad -Happy	.14	.97*	-3.31*	-9.60*	10.31*
Sadness-anger	-1.21*	-1.31*	.68*	.87*	-4.84*
Sadness - fear	-.51*	-.68*	.64*	2.10*	-3.57*
Sad - disgust	-.53*	-.65*	.67*	1.06*	-3.03*

Note: \* indicates significant at the level of.05.

As is showed in the table 3, in terms of emotional intensity, happy was the weakest in all emotions. the sad was the second, and anger was the strongest. In terms of emotional arousal, anger was the strongest in all emotions, happy was the weakest in all emotions. In terms of emotional valence, happy was the strongest in all emotions. Other emotions were equal one another. For negative score, negative feelings (anger, fear, sadness, disgust) were higher than positive emotions (happy). For negative score, negative feelings (anger, fear, sadness, disgust) were higher than positive emotions (happy).

### 3.2 Consistency (cloning Bach a coefficient) of intensity, arousal, valence, positive and negative

Scores on the PANAS, calculating the Cloning Bach alpha coefficient, the results are shown in table 4.

Table 4: mood type of each film and its subordinate factor coefficient of internal consistency

Happy film	anger film	Fear film	Hate film	sad film
factor	factor	factor	factor	factor
$\alpha$ Coefficient	$\alpha$ Coefficient	$\alpha$ Coefficient	$\alpha$ Coefficient	$\alpha$ Coefficient
intensity	intensity	intensity	intensity	intensity
valence	valence	valence	valence	valence
arousal	arousal	arousal	arousal	arousal
.76	.89	.92	.84	.74
.73	.96	.87	.81	.92
.83	.92	.95	.89	.82

negati ve	.89	negati ve	.88	negati ve	.95	negati ve	.85	negativ e	.80
positiv e	.73	positi ve	.96	positiv e	.97	positi ve	.91	positiv e	.91

As is depicted in the table 4, we can clearly know that the 6 emotional footages of each emotion have high consistency one another. As to negative emotions, emotional video clips of anger, fear, disgust on the intensity, valence, arousal, positive and negative were on the consistency of all above 0.80, only sadness in consistency intensity is 0.74; For positive emotions, each type of emotional video clips in valence and arousal, strength, positive and negative were on the consistency of all above 0.73.

#### 4. Discussions

This study aims to establish a standardized emotional video material library that can meet the need of emotion research, with multiple selection criteria of localization. The emotional video material library includes five types of emotional image fragments such as anger, fear, sadness, happiness and abuse footage, a total of 30, 6 pieces each emotion type. In order to facilitate the researchers choose more flexibly according to their own needs, this study eventually determines to select 20 criteria materials, five kinds of emotional types including anger, fear, sadness, happiness and disgust . These video clips which elicit strong and different emotional reactions can provide normalized stimulant materials for research in emotion. Further studies are needed to improve the quality of the native affective video system. In short, the emotional image material needs further expansion and improvement in order to better used in the study of emotion.

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