

## The Effect of Pride on the Scope of Attention

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**Abstract:** P According to the broaden-and-build theory, positive emotions (such as happy) can broaden an individual's thought-action repertoires, whereas negative emotion can narrow an individual's thought-action repertoires. Previous studies have demonstrated that happiness expands individual's scope of attention. Pride which is concerned with individuals' achievement is also a kind of positive emotions. However, the effect of pride on the scope of attention has not been investigated yet. The current study investigated the influence of pride and happiness on the range of attention.

We carried out 3 experiments using different emotion-inducing methods and global-local tasks to examine the influence of pride on the scope of attention. In experiment 1, we used the methods of imaginary situation which requires participants to write down their own experience of pride and happiness to induce emotions. Seventy and five undergraduate students were randomly assigned to pride, happy, or neutral conditions. The global-local task were used to assess the scope of attention. In experiment 2, the purpose was to examine the different effect between pride and happiness on the scope of attention. We adopted video clips to elicit pride and happiness. Seventy and eight undergraduate students were randomly assigned to pride, happy, or neutral conditions. We use the global-local task, which is the same as the task in experiment 1. In experiment 3, we used emotional pictures to elicit emotions. We added a shame condition which is lacked in experiment 1 and 2. Thirty-five university students completed the Navon letter task which requires participants to indicate whether the stimulus was H or L.

In experiment 1, we did not find significant effect of emotion on the scope of attention. The result of experiment 2 showed that the types of emotions had a significant effect ( $F(2, 75) = 3.43, p < .05, \eta_p^2 = 0.08$ ). We found that happiness had a function of broadening the scope of attention, whereas pride has no this function.

In experiment 3, we found significant main effect of emotional picture type (proud, neutral, happy, and shame) ( $F(3, 90) = 6.34, p < .001, \eta_p^2 = .17$ ) and interaction between emotional picture type and the Navon letter type (global or local task) ( $F(2.31, 69.31) = 9.07, p < .001, \eta_p^2 = .23$ ). We did not find significant main effect of the Navon letter task type ( $F(1, 30) = 3.91, p = .115$ ). Simple effect analysis showed that there was no difference between the global and local reaction time of pride and shame, while the local response was faster than the global response under neutral emotions ( $p < .01$ ). The global response was marginally faster than the local response under the happy condition ( $p = .07$ ). The variance analysis was conducted by subtracting the difference of the global reaction time from the local reaction time of different emotions, and the result showed that the difference was significant  $F(3, 28) = 8.12, p < .001, \eta_p^2 = .47$ . The result of experiment 3 revealed that, compared with the neutral condition, happiness caused individuals to pay more attention to the whole, whereas pride showed no such changes.

In summary, happiness broadens the scope of attention, however, pride does not expand the scope of attention. These results suggest that different positive emotions may show different effect on the scope of attention. The current study supports and extends the broaden-and-build theory of positive

emotions. In addition, we consider that these results also provide some evidence supporting for the Motivational Dimensional Model of Affect (Gable & Harmon-Jones, 2010). As for the understanding of discrete emotions, these results help enrich the function and the particularity of pride as well.

## **1. Introduction**

Positive emotion is a complex of pleasure experience, positive expression, cognitive evaluation and behavioral motivation (Fredrickson, 2001; Gable & Harmon-Jones, 2010). One of the most influential theories in the study of positive emotions and cognitive processes is the broaden-and-build theory (Fredrickson et al., 2001). The theory assumes that positive emotions broaden an individual's thought-action repertoires, including attention, cognition and range of motion. Positive emotions (such as happiness, satisfaction, optimism, and success) can expand an individual's scope of attention (Basso, Scheff, Ris, & Dember, 1996; Fredrickson, 2001; Fredrickson & Branigan, 2005). This effect exists in many paradigms. In the global-local attention processing task (Kimchi & Palmer, 1982), positive emotions make subjects more inclined to adopt the holistic processing mode in the judgment of graph similarity. In the Navon task, participants with positive emotions tend to process the whole letter first. In contrast, negative emotions narrow attention spans (Fredrickson, 2001; Fredrickson & Branigan, 2005). While many positive emotions expand the scope of attention, there are others, such as pride, that have not been addressed by previous researchers. Pride is a positive self-conscious emotion that occurs when internal attributions of achievement events are made (Tracy & Robins, 2004). Different positive emotions have their own uniqueness (Shiota et al., 2017). Pride emphasizes the activation of individual self-representation and the process of self-evaluation (Tracy & Robins, 2007). There is a close relationship between pride and motivation. Williams and DeSteno (2008) proposed the hypothesis of motivation function of pride: pride can motivate individuals to overcome difficulties and generate motivation to pursue goals. The feeling of pride aroused by the experience of personal achievement can make the individual's motivation stronger. After stripping out the influence of emotion, only the experience of achievement has no direct effect on motivation (Utz & Muscanell, 2018).

Does the motivational function of pride affect the scope of attention? Previous studies have found that emotions with high intensity of approaching motivation (such as those triggered by pictures of delicious desserts) will not lead to the expansion of attention range, but it will lead to the reduction of attention range of individuals. The titer of approaching motivation rather than emotion affects the range of attention and memory (Gable & Harmon-Jones, 2008; Gable, Threadgill & Adams, 2016; Threadgill & Gable, 2018). Although there are differences between the prideful achievement motivation and the approaching motivation of food arousal, both motivation is a motivation to promote individual action. Thus, we hypothesized that pride and happiness might have different effects on the scope of attention.

In this study, three experiments were conducted to measure the attention range characteristics of the subjects, including the method of imaginary situation induction, the method of emotional induction by video and picture materials, and the alphabetic judgment task of the whole-local attention processing task (Kimchi & Palmer, 1982) and Navon (1977). Different methods of emotional arousal and attention range measurement can improve the external validity. We hypothesized that happiness expands an individual's attention span, but pride does not.

## **2. Study 1**

### **2.1 Purpose**

To explore happiness and neutral emotions evoked by the method of imaginary situation can influence the scope of attention.

## 2.2 Method

### 2.2.1 Participants

Seventy-two undergraduates (20.5±1.32 years old) from a certain university participated in the experiment. Among them, 6 boys and 63 girls had normal or corrected vision and were right-handed. All subjects volunteered to participate in the experiment and signed the informed consent. Subjects were randomly assigned to one of three conditions, 24 subjects (20.9±0.94 years old) were assigned to the pride group, including 4 males and 21 females. Happy group contains 23 subjects (20.3±1.21 years old), including 3 males and 20 females; Under neutral emotional condition, 25 subjects (20±0.78 years old), including 2 males and 23 females.

### 2.2.2 Procedure

Using the method of imaginary situation induction, the subjects were asked to recall the events that happened to them and could arouse the corresponding emotions, thus inducing the corresponding emotions of the subjects. Visualisation is considered to be one of the effective ways to induce emotion (D'Argembeau & Van der Linden, 2008). The instructions are as follows, with the proud condition as an example: "Dear subjects, hello! You are welcome to participate in this experiment. First of all, please recall what happened to you in the past, which makes you feel very proud. Then, please write down the details of the event, including why you feel proud, your mental activities at that time, as detailed and vivid as possible. Please note that as you write, try to recall the situation and reflect on and experience the emotion." It should be noted that in the instruction language of the happy subjects, the subjects emphasized that the happy events they needed to recall did not include achievement events.

According to the emotional report table of Gross (2002), the subjective feeling report table of positive emotions that meets the requirements of this experiment was designed. The rating was divided into nine points from 0 to 8, with 0 representing none, 4 representing medium level and 8 representing the highest level. Among the emotions rated on the scale were satisfaction, pride, interest, joy, calm and surprise. After emotional induction, subjects were asked to complete the emotional self-assessment questionnaire.

The global-local task was used to test the scope of attention (Kimchi and Palmer, 1982). In this task, each group of stimuli contains three graphs, the top graph is the standard graph, one of the following two graphs is consistent with the standard graph in the overall structure arrangement, and the other graph is consistent with the local graph of the standard graph (see figure 1). The instructions were: "Please select the graph most similar to the target graph above according to your first impression." The experimental perspective was 5.7°×5.7°. Specific stimuli are shown in figure 1.

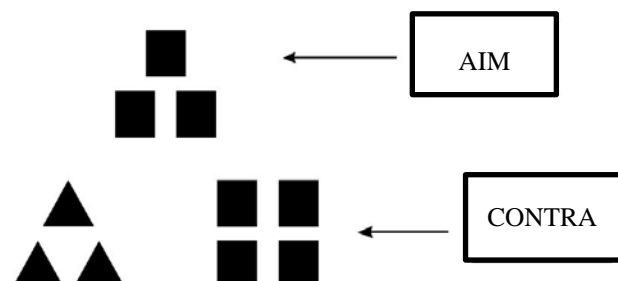


Figure 1 Global-Local Task

The experimental procedure was designed by E-Prime2.0. Three groups of participants respectively recalled the experience of inducing certain emotions and wrote it down on the manuscript paper. Then they filled in the emotional self-evaluation questionnaire and demographic variables (including age and gender), and finally completed the global-local attention processing task by pressing the key. The formal experiment consisted of 24 experiments, 16 of which were

interference tasks set to prevent reaction set, and part of the interference task consisted of 6 or 9 small graphs (triangles or squares) (Fredrickson & Branigan, 2005). For each trial, the fixation point was presented at 500ms, followed by the standard picture, and the comparison picture was presented at an interval of 300-500ms. The subjects were asked to select the figure most similar to the standard figure above according to the first impression and press the button to respond, and then entered the next trial with an interval of 500-700ms. After completing the experiment task, the subjects will receive the fee and leave the laboratory. The experiment will take 15-20 minutes.

## 2.3 Results & Discussion

One-way anova was conducted on the scores of different emotion dimensions in the emotional assessment results, and it was found that the main effect of emotion types was significant in all the other dimensions except surprise (see table 1). Since the variance was no heterogeneity and the number of participants in each group was different, Tamhane 't2 was selected for post-mortem test (Hayter & Tamhane, 1991). The pride intensity of the proud group (M=6.04, SD=1.04) was higher than that of the happy group (M=4.78, SD=1.83) ( $p<.05$ ) and the neutral group (M=3.48, SD=2.85) ( $p<.01$ ). But there was no significant difference in the intensity of pride between the happy group and the neutral group. There was no significant difference in the happiness intensity of the happy group (M=6.65, SD=1.77) and the pride group (M=6.17, SD=1.55) ( $p=.102$ ), but the happiness intensity of both groups was significantly higher than that of the neutral group (M=2.80, SD=2.47) ( $p<.001$ ). The results of emotional induction evaluation showed that the corresponding emotions were successfully induced in different experimental groups.

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Table 1 The result of imaginary situation ( $M(SD)$ )

	satisfaction	pride	interest	happiness	calm	surprise
Happiness group	6.00(2.04)	4.78(1.83)	5.65(1.92)	6.65(1.77)	4.65(2.36)	1.39(2.08)
Pride group	6.00(1.47)	6.04(1.04)	4.83(2.31)	6.17(1.55)	4.71(2.37)	1.88(2.29)
Neutral group	2.80(2.47)	3.48(2.85)	3.48(2.85)	2.80(2.14)	6.20(1.60)	1.36(1.89)
$F(2, 69)$	21.67***	9.40***	3.81*	31.60***	4.39*	.46
$\eta_p^2$	.39	.21	.10	.48	.11	.01

Note: \* $p<.05$ , \*\* $p<.01$ , \*\*\* $p<.001$ .

Univariate anova was performed on the results of the total-local attention processing task under three emotional backgrounds. The main effect of emotion type was not significant,  $F(2, 69)=.99$ ,  $p=.37$ , the number of overall judgments made by the pride group (M=5.58, SD=1.93) and the pleasure group (M=4.91, SD=1.78) was slightly larger than that of the neutral group (M=4.88, SD=2.1). In this experiment, there was no significant effect of pride or pleasure on the scope of attention. One possible reason is the emotion-eliciting paradigm: although it has been found to induce emotional states in subjects, subjective reports may reflect more arousal of a cognitive component. When Johnson (2005) took self-reported subjective emotional experience as an indicator in the experiment, they did not find that the attention range changed significantly under different emotional conditions. But when the frequency of the appearance of Duchenne smiles during emotional triggers was used as an indicator of mood, positive emotions expanded the range of attention. This suggests that evoked methods such as video or pictures may be more effective in detecting the range of attention. Therefore, in the following experiments 2 and 3, video and picture-induced methods were used to explore the influence of pride and happiness on the scope of attention.

## 3. Study 2

### 3.1 Purpose

To explore the effect of video evoked pride, happiness and neutral emotions on the scope of attention.

## 3.2 Methods

### 3.2.1 Participants

78 undergraduates ( $21.3 \pm 1.20$  years old) from a certain university participated in the experiment. Among them, 15 boys and 63 girls had normal or corrected vision and were right-handed. All subjects volunteered to participate in the experiment and signed the informed consent, and were paid after the experiment. Subjects were randomly assigned to three conditions. 26 subjects ( $21.8 \pm 0.9$  years old) were in the condition of pride, including 6 males and 20 females. Happy mood condition 25 subjects ( $20.7 \pm 1.41$  years old), including 4 males and 21 females. Neutral emotional condition 27 subjects ( $21 \pm 1.72$  years old), including 5 males and 22 females.

### 3.2.2 Procedure

Three videos are selected: (1) proud-inducing materials: 4 minutes documentary clips of China's successful bid of the Olympic Games are selected; (2) happy mood inducing materials: Watch the humorous short film "Tom and Jerry" for about 4 minutes; (3) neutral emotion induction group: watch the segment of bird flight documentary "migratory birds" without primates, about 4 minutes. Among these materials, happy emotion induction materials and neutral emotion induction materials can effectively induce target emotions in previous studies.

The participants were randomly assigned to the proud group, the happy group and the neutral group to watch video clips that evoked corresponding emotions. Before watching the video clips, participants were told not to suppress any emotions generated during the viewing, but to let them flow naturally. Then I completed the whole-part task and emotional self-assessment questionnaire, and the process was the same as experiment 1.

## 3.3 Results and Discussion

One-way anova was conducted on the scores of different dimensions in the emotional assessment results. It was found that, in the dimension of pride, the main effect of the emotion group type was significant  $F(2, 75) = 14.9$ ,  $p < .001$ ,  $\eta_p^2 = .29$ ; In the dimension of happy emotion, the main effect of emotion group type was significant  $F(2, 75) = 3.78$ ,  $p < .05$ ,  $\eta_p^2 = .09$ , but not significant in other dimensions (see table 2). The results showed that the pride of the pride group ( $M = 5.21$ ,  $SD = 2.63$ ) was significantly higher than that of the happiness group ( $M = 1.74$ ,  $SD = 1.67$ ) ( $p < .001$ ) and the control group ( $M = 3.45$ ,  $SD = 2.09$ ) ( $p < .001$ ). Happy mood ( $M = 5.26$ ,  $SD = 2.16$ ) than proud group of happy mood ( $M = 4.88$ ,  $SD = 2.45$ ) and the control group ( $p < .001$ ) ( $M = 3.71$ ,  $SD = 1.90$ ) ( $p < .05$ ). Different experimental groups successfully induced corresponding emotions.

Table 2 The results of video situation ( $M(SD)$ )

	satisfaction	pride	interest	happiness	calm	surprise
Happiness group	3.89(2.31)	1.74(1.67)	5.04(1.58)	5.26(2.16)	4.81(1.90)	2.37(2.31)
Pride group	4.35(2.41)	5.21(2.63)	4.65(2.10)	4.88(2.45)	4.27(2.65)	1.69(2.15)
Neutral group	3.57(1.89)	3.45(2.09)	4.21(1.81)	3.71(1.90)	5.43(1.99)	2.14(1.76)
$F(2, 78)$	.83	14.9***	1.38	3.78*	1.89	.73
$\eta_p^2$	.21	.29	.03	.09	.05	.02

Univariate anova was conducted on the total number of the whole-local attention processing tasks of the three emotion groups. Due to the heterogeneity of variance, brown-forsythe correction was adopted (Vallejo, Fernandez, & livacic-rojas, 2007), and the difference between the different emotion groups was significant,  $F(2, 75) = 3.43$ ,  $p < .05$ ,  $\eta_p^2 = .08$ . Post test (Tamhane 't2) found that there was no significant difference in the overall number of choices between the proud group ( $M = 5.2$ ,  $SD = 2.47$ ) and the control group ( $M = 5.48$ ,  $SD = 1.47$ ) ( $p = .947$ ). The number in the happiness group

( $M=6.46$ ,  $SD=1.33$ ) significantly more overall graphics than the control group ( $M=5.48$ ,  $SD=1.47$ ,  $p<.05$ ), as shown in figure 2.

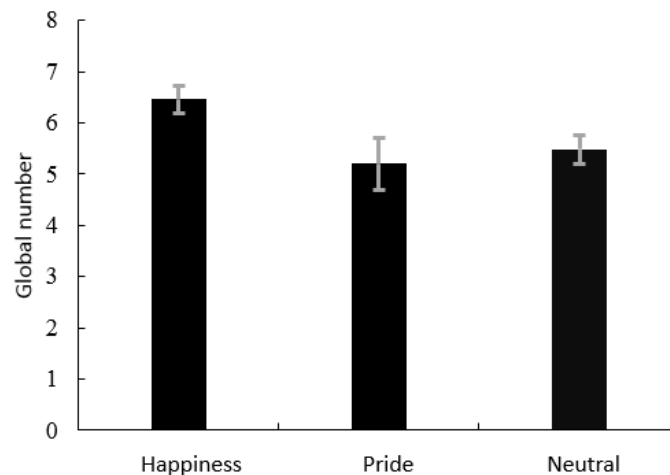


Figure 2 The average number in different group

The results of experiment 2 are consistent with previous studies (Fredricks & Branigan, 2005; Isen, 1990), happy mood can expand the scope of visual attention, so that subjects show more bias to the overall characteristics in the task. However, there was no significant difference between the number of overall images selected by the pride group and the neutral group.

Experiment 1 and experiment 2 were designed for different subjects. Different subjects evoked different types of emotions, and individual differences would affect the sensitivity of the experiment. In experiment 3, the internal design of subjects was adopted to induce emotions with more specific emotive pictures (Tracy, Cheng, Robins, & Trzesniewski, 2009). A negative emotion (shame) was also added as a control condition. Shame and pride are somewhat similar (Brown & Marshall, 2001), but at different titers. To test whether pride has a stable effect on attention span, the Navon task was used to detect attention span in experiment 3.

## 4. Study 3

### 4.1 Purpose

To explore the effects of primed feelings of pride, joy, shame and neutral emotion on the scope of attention.

### 4.2 Methods

#### 4.2.1 Participants

Thirty-five graduate students ( $23\pm 1.21$  years old) from a certain university participated in the experiment, all of whom were female, with normal visual acuity or corrected visual acuity, and right-handed. All of the subjects volunteered to participate in the experiment and signed the informed consent, and were paid for the experiment after the end of the experiment.

Experiment 3 is the internal design of 4 (picture type: proud picture, neutral picture, happy picture, shame picture)  $\times$  2 (task type: global feature, local feature). The experimental program used DMDX software.

#### 4.2.2 Procedure

In study 3, visual picture materials were used to induce emotions, and the subjects' emotions were induced through the expression of their emotions. The pictures made by Tracy and Robins (2007) are as follows: 2 proud pictures, 2 happy pictures, 2 neutral pictures and 2 shame pictures. Each picture contains 1 male and 1 female, with a total of 8 pictures.

The results of cross-cultural studies show that the explicit non-verbal expressions of the three emotions have cross-cultural universality (Tracy & Robins, 2007; Tracy & Matsumoto, 2008), image

size is 130×180 pixels, image stimulus angle is 5.0°×6.9°. The Navon letter is a compound, hierarchical stimulus that consists of a series of small letters that form a large letter (Navon, 1977).

In this experiment, there are four capital English letters H, T, L and F, which are combined in pairs to form 8 overall letter stimuli, and local letters to form a 5×5 overall structure. The eight letters are (whole letter/local letter) T/F, F/T, L/H, H/L, T/L, L/T, F/H, H/F. Each try presents a letter stimulus. When the stimulus was presented, the subjects were asked to determine which letter in the combination was present in the stimulus. For example, if the letter combination presented in a trial is H/F, the instruction is "please judge whether 'F' or 'H' in the picture as quickly and accurately as possible". The partial letter angle is 0.5°×0.7°, while the overall letter Angle is 3.3°×4.5°. The stimulus picture is presented in the center of the field.

The subjects went into the lab and were told to complete a cognitive task.

The instructions are as follows: "dear subjects, first of all, a '+' 300ms will be displayed in the center of the screen, and then a picture of fixation point will be displayed for 180ms. Please pay attention to the picture.

After the photo disappears, there will be an empty screen of 60ms, and then a large letter composed of a series of small letters will appear. Please judge as quickly and accurately as possible whether it is "L" (the global letter) or "H" (the local letter) in the picture. It is "L" pressing the "1" key on the keyboard, and "H" pressing the "0" key on the keyboard.

When the subjects pressed buttons, the target stimulus disappeared and entered the next trial. The maximum duration of the target stimulus was 3000ms. The subjects were required to respond quickly on the basis of ensuring the correctness, and the reaction keys were balanced in the experiment, with a total of 64 tests. There were 16 trials before the actual experiment. See figure 3 for the specific flow chart. After completing the task, the subjects will receive the fee and leave the laboratory, which will take 5-10 minutes.

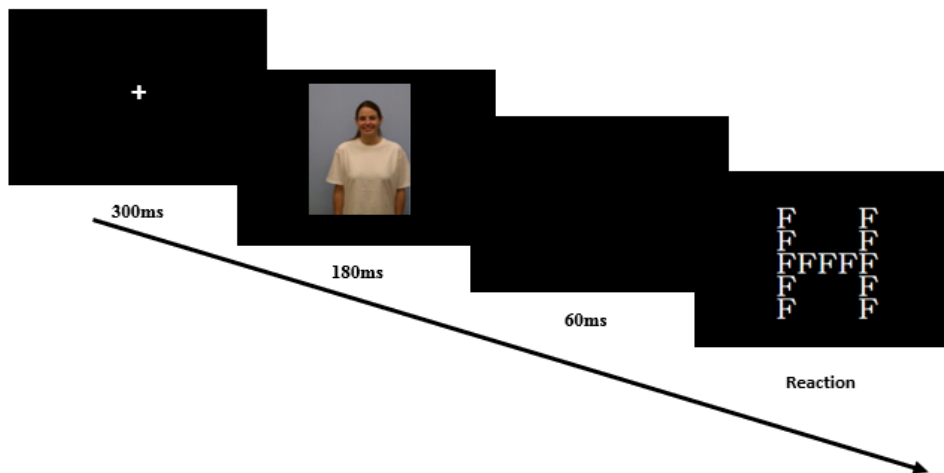


Figure 3 The procedure plot

### 4.3 Results and Discussion

A total of four subjects who had not completed the experiment were excluded. Repeated measure variance analysis was carried out on the response accuracy of the subjects under the four expression conditions. The differences between the four emotion conditions and the size letters were not significant. The results of repeated measures variance analysis of RTs showed that the main effect of emotional picture type (proud, neutral, happy, ashamed) was significant,  $F(3, 90)=6.34, p<.001, \eta_p^2=.17$ , and the main effect of task type of Navon letter (overall feature, local feature) was not significant  $F(1, 30)=3.91, p=.115$ . The interaction between emotion and the Navon task was significant  $F(2.31, 69.31)=9.07, p<.001, \eta_p^2=.23$  (the sphericity hypothesis was not satisfied, and the Geisse correction value was adopted). The simple effect analysis showed that there was no difference in the global and local responses under the conditions of pride and shame. In the neutral emotional condition, the local reaction time is faster than the global,  $p<.01$ ; Under the condition of

happy emotion, the global RTs was faster than the RTs and the difference was marginal and significant ( $p=.07$ ).

In addition, the difference between the RTs of each emotional condition to small local letters minus the RTs to large overall letters was compared. The results showed that the difference between pride, neutrality and shame was negative, meaning the response to the part was faster than the whole, while the difference between happiness was positive and the response to the whole was faster.

Variance analysis was conducted on the differences in the local-global RTs of different emotions, and the results showed that the differences were significant  $F(3, 28) = 8.12, p < .001, \eta^2 = .47$ .

The local-global difference of the shame condition was significantly lower than that of the pride condition ( $p < .01$ ), while the local-global difference of the happiness condition was significantly higher than that of the neutral condition ( $p < .05$ ), the pride condition ( $p < .001$ ), and the shame condition ( $p < .001$ ). The detailed results are shown in table 3 below.

Table 3 RTs in the different mood condition ( $M \pm SD$  ms)

	pride	happiness	neutral	shame
Global	937.95±36.50	975.17±35.90	1002.02±33.52	1038.13±35.73
Local	895.96±29.50	1027.33±26.54	921.19±25.04	910.98±30.42
Global-Local	-41.99±170.05	52.15±156.35	-80.82±162.95	-127.15±66.30

The results showed that happiness led individuals to focus more on the global than neutral emotions, while shame and pride showed no such difference. As one of the positive emotions, pride shows a tendency to narrow the scope of attention. Shame causes individuals to focus more on the local and respond least to the global characteristics.

## 5. Discussion

The study examined the effect of pride on attention span through three behavioral experiments, three emotional induction methods and two attention tasks.

In experiments 1 and 2, the subjective reporting method was used to investigate the success of emotional induction. The results of emotional induction in experiment 1 showed that the proud group successfully induced the proud emotion instead of the happy emotion, while the happy group experienced no significant difference between the proud emotion and the happy emotion. This may be due to the fact that happiness induced by individual subjective memories involves more self-feedback. Although participants were asked not to recall achievement events, such subjective reporting may not fully control independent arousal of emotions. In the video-induced method, this situation was resolved to some extent, and the happy group and the proud group were independent of the arousal of happy emotion and proud emotion. This suggests that it is necessary to distinguish between happy emotions and proud emotions when imagining the situation to induce happy emotions.

Both experiments 2 and 3 found that positive emotions of joy or joy had a broadening effect on attention span, and this effect was consistent across different emotional arousal methods and attention tasks, while guilt tended to narrow attention span. This result supports the extension-construction theory (Frederickson & Branigan, 2005), that is, positive emotions can temporarily broaden individual mind-action sequences, while negative emotions can temporarily narrow individual mind-action sequences. More importantly, we also found that although pride was a positive emotion, it did not extend the range of attention.

From an evolutionary point of view, pride plays an important role in individual acquisition, maintenance and improvement of group or social status (Tracy, Robins, & Cheng, 2009).

Therefore, when an individual needs to complete a task under the condition of pride, although the individual experiences a positive emotional experience similar to happiness, the achievement motivation will also be enhanced, making the individual produce the idea of "doing better". Compared with happiness, pride is more related to achievement and sense of self-worth (Leary, 2007;



Tracy & Robins, 2007). According to the control-value theory proposed by Pekrun et al. (2014), achievement emotion is defined as the emotion related to achievement activities and their success or failure results, and pride is one of the achievement emotions.

There is a reciprocal causal relationship between achievement emotion and achievement: the experience of achievement will generate pride, which can also predict an individual's future achievements (Pekrun, Lichtenfeld, Marsh, Murayama, & Goetz, 2017).

In the research on the relationship between achievement motivation emotion and achievement motivation within individuals, achievement motivation generated by achievements is one of the predictors of pride (Goetz, Sticca, Pekrun, Murayama, & Elliot, 2016).

According to Gable's motivation theory (Gable & Harmon-Jones, 2010), this motivation which is concerned with achievement may be similar to approach motivation, narrowing the scope of attention.

In general, on the basis of expanding the build-broaden theory, this study improves the positive emotion with motivation function the influence of pride on the scope of attention, enriches the research on different types of positive emotion, and reveals the unique function of pride. Study 1 found that compared with neutral emotions, pride and happiness has a slightly larger scope of attention. In study 2, it was found that compared with happiness, the attention range of pride showed a tendency of narrowing. In study 3, it was found that compared with the negative emotion, shame, which was negatively correlated with motivation (Brondino, Raccanello, & Pasini, 2014), the scope of attention in the pride condition was no more narrowed.

This suggests that on the basis of expanding the motivational dimension model of emotion proposed by Frederickson et al (2010) and Frederickson et al(2001), there may be a more effective explanation. Negative emotions narrow the scope of attention, and shame, as a negative emotion associated with motivation, does not show an expanded scope of attention. It reveals both emotion and motivation have an effect on the scope of attention.

Some valuable results have been found, there are still deficiencies that need to be explored in subsequent studies. First, this study only selects authentic pride, and the results cannot be applied to other types of pride, such as hubristic pride. Previous studies have found differences in the relationship between authentic pride and hubristic as well as internal and external motivation (Damian & Robins, 2013). Further research is needed to determine whether the difference of the scope of attention between the two types of pride

Second, there is no direct measurement of achievement motivation, approach motivation and avoidance motivation, so it is impossible to reveal whether the influence of emotion on the scope of attention is realized through the internal mechanism of motivation. The role of this variable can be further tested in the future.

Third, in study 3, the emotionally aroused pictures are all pictures of Caucasian emotional expressions. Although Tracy and Matsumoto (2008) believe that there is cultural consistency, in the context of eastern culture, whether there is cultural difference in the recognition of the pride emotion and attention is still need to be explored.

In general, the conclusions of this study are as follows: Imagining the situation, videos or picture materials can arouse the subjects' feelings of pride more effectively; Happiness extended the scope of attention, but pride did not show the tendency

## References

- [1] Basso, M. R., Schefft, B. K., Ris, M. D., & Dember, W. N. (1996). Mood and global-local visual processing. *Journal of the International Neuropsychological Society*, 2(3), 249-255.
- [2] Brondino, M., Raccanello, D., & Pasini, M. (2014). Achievement goals as antecedents of achievement emotions: The 3 × 2 achievement goal model as a framework for learning environments design. In T. Mascio, R. Gennari, P. Vitorini, R. Vicari, & F. de la Prieta (Eds.), *Methodologies and Intelligent Systems for Technology Enhanced Learning. Advances in Intelligent Systems and Computing*, Vol.292 (pp. 53-60). Switzerland: Springer, Cham.

- [3] Brown, J. D., & Marshall, M. A. (2001). Self-esteem and emotion: Some thoughts about feelings. *Personality and Social Psychology Bulletin*, 27(5), 575-584.
- [4] Damian, R. I., & Robins, R. W. (2013). Aristotle's virtue or Dante's deadliest sin? The influence of authentic and hubristic pride on creative achievement. *Learning & Individual Differences*, 26, 156-160.
- [5] Diener, E., Oishi, S., & Lucas, R. E. (2003). Personality, culture, and subjective well-being: Emotional and cognitive evaluations of life. *Annual Review of Psychology*, 54, 403-425.
- [6] D'Argembeau, A., & Van der Linden, M. (2008). Remembering pride and shame: Self-enhancement and the phenomenology of autobiographical memory. *Memory*, 16(5), 538-547.
- [7] Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218-226.
- [8] Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion*, 19(3), 313-332.
- [9] Gable, P. A., & Harmon-jones, E. (2008). Approach-motivated positive affect reduces breadth of attention. *Psychological Science*, 19(5), 476-482.
- [10] Gable, P. A., & Harmon-Jones, E. (2010). The motivational dimensional model of affect: Implications for breadth of attention, memory, and cognitive categorization. *Cognition and Emotion*, 24, 322-337.
- [11] Gable, P. A., Threadgill, A. H., & Adams, D. L. (2016). Neural activity underlying motor-action preparation and cognitive narrowing in approach-motivated goal states. *Cognitive, Affective, & Behavioral Neuroscience*, 16(1), 145-152.
- [12] Goetz, T., Sticca, F., Pekrun, R., Murayama, K., & Elliot, A. J. (2016). Intraindividual relations between achievement goals and discrete achievement emotions: An experience sampling approach. *Learning and Instruction*, 41, 115-125.
- [13] Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, 39(3), 281-291.
- [14] Isen, A. M. (1990). The influence of positive and negative affect on cognitive organization: Some implications for development. In N. L. Stein, B. Leventhal, & T. Trabasso (Eds.), *Psychological and biological approaches to emotion* (pp. 75-94). Hillsdale, NJ, US: Lawrence Erlbaum Associates, Inc.
- [15] Johnson, K. J., & Fredrickson, B. L. (2005). "We all look the same to me": Positive emotions eliminate the own-race bias in face recognition. *Psychological Science*, 16, 875-881.
- [16] Kimchi, R., & Palmer, S. E. (1982). Form and texture in hierarchically constructed patterns. *Journal of Experimental Psychology: Human Perception and Performance*, 8(4), 521-535.
- [17] Leary, M. R. (2007). Motivational and emotional aspects of the self. *Annual Review of Psychology*, 58(1), 317-344.
- [18] Navon, D. (1977). Forest before trees: The precedence of global features in visual perception. *Cognitive Psychology*, 9, 353-383.
- [19] Pekrun, R., & Perry, R. P. (2014). Control-value theory of achievement emotions. In R. Pekrun & L. Linnenbrink-Garcia (Eds.), *Educational psychology handbook series. International handbook of emotions in education* (pp. 120-141). New York, NY, US: Routledge/Taylor & Francis Group.
- [20] Pekrun, R., Lichtenfeld, S., Marsh, H. W., Murayama, K., & Goetz, T. (2017). Achievement emotions and academic performance: Longitudinal models of reciprocal effects. *Child Development*, 88(5), 1653-1670.

- [21] Shiota, M. N., Campos, B., Oveis, C., Hertenstein, M. J., Simon-Thomas, E., & Keltner, D. (2017). Beyond happiness: Building a science of discrete positive emotions. *American Psychologist*, 72(7), 617-643.
- [22] Threadgill, A. H., & Gable, P. A. (2018). Negative affect varying in motivational intensity influences scope of memory. *Cognition and Emotion*, 33(2), 332-345
- [23] Tracy, J. L., & Robins, R. W. (2004). Show your pride: Evidence for a discrete emotion expression. *Psychological Science*, 15, 194-197.
- [24] Tracy, J. L., & Matsumoto, D. (2008). The spontaneous expression of pride and shame: Evidence for biologically innate nonverbal displays. *Proceedings of the National Academy of Sciences*, 105(33), 11655-11660.
- [25] Tracy, J. L., & Robins, R. W. (2007). The psychological structure of pride: A tale of two facets. *Journal of Personality and Social Psychology*, 92(3), 506-25.
- [26] Tracy, J. L., Cheng, J. T., Robins, R. W., & Trzesniewski, K. H. (2009). Authentic and hubristic pride: The affective core of self-esteem and narcissism. *Self & Identity*, 8(2-3), 196-213.
- [27] Utz, S., & Muscanell, N. L. (2018). Pride, but not envy, mediates the effect of system-generated achievement messages on motivation. *Frontiers in Psychology*, 9, 628.
- [28] Vallejo, G., Fernández, M., & Livacic-Rojas, P. E. (2007). Power differences between the modified Brown-Forsythe and mixed-model approaches in repeated measures designs. *Methodology European Journal of Research Methods for the Behavioral & Social Sciences*, 3(1), 1-13.
- [29] Williams, L. A., & DeSteno, D. (2008). Pride and perseverance: The motivational role of pride. *Journal of Personality and Social Psychology*, 94(6), 1007-1017.