

*Emotional Responses to Different Modes of Occlusion Applied to Phrases Expressing Situational/Emotional Concepts*

Ching Chih Liao, Ming Chuan University, Taiwan

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**Abstract**

In prior basic research exploring the influence of different Chinese character structures and varied positions of occlusion, the speed and accuracy of character reading recognition has been explored. Based on those cumulative research results, this study extends the investigation from occluding single words to occluding phrases. The experimental design, tested on 105 men and 115 women in the general public, uses mixed-design ANOVA, with two independent variables: mode of occlusion (n=8) and emotion (n=5), and a between-subjects factor of gender, to measure the dependent variable of emotional response to text phrases. The purposes of this research are to understand: 1. Whether text-occluding techniques are more conducive to emotional arousal than normal text; 2. Whether different modes of occlusion can evoke different degrees of emotion for the same phrase; and 3. Whether there are differences in emotional responses between genders to different occlusion patterns on the same text. The data was analyzed using repeated measures and the results showed that different occluding modes do affect the strength of the emotional response to the same emotional phrase. It was found that the occluding modes of Fading and Occluding strokes with objects have the most significant emotional connection for each phrase. In comparison, the same phrases with no occlusion elicited the least emotional response from participants. The most common emotional response to the five phrases with different occlusion modes was “calm” with the exceptions of the emotional responses of “surprise” for Stepping on land mines and “calm and joy” for Oktoberfest.

Keywords: Mode of Occlusion, Text Phrases, Emotional Responses, Emotions

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## **1. Introduction**

This project is based on prior basic research exploring the influence of occlusion on recognition of Chinese characters (Tsao & Liao, 2015; Liao, 2018), continuing to systematically extend and deepen the discussion, hoping to gradually establish relevant principles to facilitate teaching and design applications. The term occluded text refers to the part of the text that is cut off or covered, that is, the unknown and invisible text (Luijckx, Thillou, & Gosselin, 2006), which is a creative technique by designers to convey a certain concept or achieve specific communication effects. The purpose is to deepen impressions (Zeigarnik, 1999), as well as to improve attention and processing motivation (Meyers-Levy & Tybout, 1989).

The stimulus materials used in the basic research were all occluded single characters; however, in actual design practice for books, posters, packaging, and products, the themes or product names are often double or multiple characters. Moreover, in order to match or improve consistency of the design tonality and emotion with the theme or product, designers will select appropriate characters for processing. Occluding part of the strokes is one of the methods to create text shapes, so very diverse occlusion modes are created. Aside from vertical or horizontal occlusion on the four sides, there are many other occlusion modes because the text itself has hidden meanings (Fiske, 2010) and also has shape and function characteristics (Resnick, 2003); accordingly, fonts of different shapes are rich in emotions. Therefore, questions arise as to whether characters occluded differently have different emotional characteristics, whether they are more able to arouse emotional responses, and the concurrent possibility that there are words or phrases suited for specific emotions/situations (herein defined as: can trigger emotions or association with situational words or phrases).

Therefore, the questions that this research explores include: 1. Whether the technique of occluding text is more helpful to evoke emotional response than use of normal text; 2. Whether designs with different modes of occlusion evoke different emotional responses to the same text; and 3. Whether there are differences in emotional responses between genders to different occlusion patterns on the same text.

### **1.1 Emotion**

The term "emotion" refers to the field of understanding the psychological state of a person, a means of cognition or judgment; as one first perceives whether a situation is pleasant or not, then emotion arises, so cognition is usually accompanied by emotion (Peters, 1970). Norman (2004) also mentioned that everything we do comprises both cognition and emotion, and cognition is responsible for the acquisition of meaning, while emotion reflects the value we attach to objects or matters.

Regarding the term emotion, over the past century, psychologists have not been able to give a satisfactory definition, and researchers choose arguments according to their own research (Feng, 2005). Therefore, the key points of this study's interpretation of emotion are set according to Webster's dictionary (Gove, 1982), as follows: 1) a conscious mental reaction (such as anger or fear) subjectively experienced as strong feeling usually directed toward a specific object and typically accompanied by physiological and behavioral changes in the body; 2) a state of feeling; 3) the affective aspect of consciousness.

Ekman, Friesen, & Friesen (1982) proposed six basic emotions in their research, including: joy, distress, anger, fear, surprise, and disgust. Russell (1980) put forward the view that

emotions are relative, and Plutchik (2002) stated that emotions have several characteristics, including that they have intensity changes, show similarity to one another, and may express opposite or polarized feelings or actions. Goleman (1996) divided emotions into eight categories based on suggestions from experts and assigned synonyms to each category (Table 1). Table 1 includes five of the emotions mentioned by Ekman et al. (1982), with the exception of distress.

Table 1: Eight Categories of Emotion and Their Respective Synonyms

Emotion Category	Synonym	Emotion Category	Synonym
Anger	Angry, resentful, sullen, indignant...	Sadness	Sad, sullen, melancholic, depressed...
Fear	Anxious, nervous, worried, doubtful...	Joy/Happiness	Excited, happy, pleased, delighted...
Love	Affirmed, friendly, intimate, affectionate...	Surprise	Shocked, amazed, astonished...
Disgust	Belittled, contempt, ridiculed, rejected...	Shame	Guilty, embarrassed, remorse, shame...

## 1.2 Text Design and Emotion

Designers have long relied on changing the shape and form of letters and words to heighten text meaning (Malik, Aitken & Waalen (2016). For example, research has confirmed that fonts are related to taste, and whether the font is round or not is highly correlated with sweet, sour, bitter and spicy flavors (Velasco, Woods, Deroy & Spence, 2015a), such as round fonts are usually associated with sweet taste (Velasco, Salgado-Montejo, Marmolejo-Ramos & Spence, 2014). Font characteristics can also convey emotional meaning: Rounded fonts are associated with more positive emotions, while angular fonts are associated with negative emotions (Morrison, 1986; Velasco et al., 2015a; 2015b). Other studies have shown that dynamic text design can convey emotions (Plutchik, 1980; Acton et al., 1998; Wang et al., 2004); for example, text designed to twist and shake can convey anger; loops convey joy; tense movements convey fear.

## 1.3 Text Meaning and Situational Associations / Context and Design

Barwise and Perry (1983) defined situation in two ways. One is that a situation expression is a kind of support for facts or messages and the situation corresponds to the deep meaning conveyed by the message. Two is that the situation takes the context into consideration, which enhances the interaction between the situation and the message dialogue relationship.

According to this definition, integrating the concept of situation into text design can be said to be an associative response of the designer to the text meaning, which indicates that through imagination, connection with one's own experience, and cognition of the environmental context, the text is transformed into a specific message meaning, even accompanied by certain emotions that interpret it. Take the occlusion design of the product name for high mountain tea packaging as an example. Imagine the tea growing on high mountains, that are soaked in haze all year round, with fluctuating cloud cover. Therefore, the more the character strokes are deliberately occluded to fit the situation. the better the quality of the tea seems. Norman (2004) mentioned that another important aspect of situational products lies in their suitability for the situation, which is also applicable to graphic design. Words themselves contain different concepts of situations or emotions, the expression of which can be achieved through different text design techniques.

According to the "Chinese Parts of Speech Analysis" report (Chinese Knowledge and Information Processing Lab of Academia Sinica, 1993), the Chinese language is divided into eight parts of speech: aspect words (N), predicates (V), adverbs (D), non-predicate adjectives (A), prepositions (P), conjunctions (C), auxiliary words (T) and interjections (I). Aspect words include: determinants, pronouns, location words and nouns (for example: objects, time, places, etc.), and predicates include action words (such as: jump, eat, run, etc.). As aspect words and predicates are related to the information represented by other parts of speech as the most meaningful, nouns are selected for investigation in this study.

## 2. Research Methods

### 2.1 Experimental Design

A three-factor mixed design experiment was designed with the independent variables mode of occlusion (n=8) and emotion (n=5, calm, joy, sad, surprise and fear (within), and a between-subjects factor of gender, to measure the emotional response to text (a total of 5 text phrases: High Mountain Tea, Oktoberfest, Thirty Years, Foreign Culture, and Stepping on Land Mines) with the 5 emotions on a 7-point Likert scale, through a questionnaire created for data collection. In order to avoid cognitive overload of the participants, different participants were recruited for each of the five words tested, and the data were analyzed by repeated measures ANOVA.

### 2.2 Participants

A total of 230 people from the general public, aged between 20 and 65, were divided into five groups. The participants were assigned as shown in Table 2. Each group provided emotional responses to one text phrase, resulting in a total of 220 pieces of valid data.

Table 2: Assignment of Participants

High Mountain Tea		Oktoberfest		30 Years		Foreign Culture		Stepping on Land Mines	
M	SD	M	SD	M	SD	M	SD	M	SD
23.45	8.39	22.68	6.20	23.39	7.52	22.32	5.31	23.14	7.10
male	female	male	female	male	female	male	female	male	female
20	27	23	24	19	19	22	22	21	23
Total =47		Total= 47		Total= 38		Total =44		Total= 44	

Note:M/SD Unit: years of age

### 2.3 Test Stimulus Sample

Text phrases with emotional associations were collected from life and literature, then those that are easily associated with situations or emotions were selected by the researcher using the screening principle of avoiding direct use of emotion words such as happy, angry, etc. This resulted in the selection of 5 text phrases, described as follows, with their respective preset situation and emotional response: 1. High Mountain Tea imagines the situation of tea grown on cloud-shrouded mountains and a calm normal situation or emotion; 2. Oktoberfest can be linked to joyful emotions or situation; 3. Thirty Years, which indicates a situation wherein time flies, with emotions of surprise and sadness; 4. Stepping on Land Mines stirs

the imagination with the fear of encountering bloody flesh; 5. Foreign Culture can be associated with the emotions of surprise or amazement evoked by differences.

Seven (7) modes of occlusion were applied: (1) edge bleed, (2) occlude 2/9 of strokes on the right side, (3) replace strokes with text, (4) place other objects between the characters, (5) obliquely occlude the lower right corner, (6) cover multiple strokes with other objects, and (7) occlude by fading, plus a normal character without occlusion, making a total of 8 techniques. Each of these techniques was used to design the 5 text phrases, respectively, applying bold font, the same font size, and the same layout style. The samples are shown in Table 3.

Table 3: Experimental Samples

	High Mountain Tea	Oktoberfest	Thirty Years	Foreign Culture	Stepping on Land Mines
Bleeding					
Right-side occlusion					
Occluded lower right corner					
Fading					
Object in middle					
Object replacing strokes					
Small text replacing stroke					
Normal Text					

## 2.4 Experimental Equipment

An IBM computer with a 17-inch screen (width x height = 34 x 27.2 cm) at a resolution of 1024 x 768 pixels was used. Each participant was positioned 45 cm away from the computer screen, with a viewing angle of 15 degrees. The eight (8) samples, with different modes of occlusion applied to each text phrase, were shown to each participant. Using the five

emotions and a 7-point Likert scale, participants each completed a questionnaire designed in Google Forms.

## 2.5 Experimental procedure

The experiment was carried out independently in the same research room. Before the experiment started, the participants were briefly informed about the experimental method. During the process, the eight (8) samples of the same text phrase were sequentially displayed. The order was randomized for each experiment and only one text sample was displayed on the screen at a time. Participants were asked to check the appropriate level on the five emotional scales for each sample of occluded text. The levels ranged from 1-7, indicating the degree of affirmation from low to high. There was no time limit for answering. After the experiment was completed, a small gift was given to each participant.

## 2.6 Results

A three-factor mixed design ANOVA was used to analyze the emotional responses to text phrases in relation to mode of occlusion, emotional vocabulary and gender, in which mode of occlusion and emotional vocabulary were designed as dependent variables (within), while gender was treated as a between-subjects factor. The emotional response data for the five (5) text phrases was analyzed and tested by repeated measures ANOVA, and the results are as follows. In Tables 4 to 8, it can be seen that there is no significant difference between genders in the emotional response results for these five phrases, so this factor is not discussed in the sub-sections below.

### 2.6-1 High Mountain Tea

The results for mode of occlusion in Table 4,  $F(7,315)=2.66$ ,  $p<.011$ ,  $\eta^2_p=0.056$ , indicate that there was a significant difference between at least one mode and the others. The Scheffe Post-Hoc test results for Fading ( $M=2.70$ ,  $SD=0.15$ ), Occluded by object ( $M=2.56$ ,  $SD=0.10$ ), Bleeding ( $M=2.55$ ,  $SD=0.12$ ), Occluded by small text ( $M=2.37$ ,  $SD=0.13$ ) and Objects placed between characters ( $M=2.46$ ,  $SD=0.12$ ), were greater than Occluded right side ( $M=2.37$ ,  $SD=0.13$ ) and Occluded lower right corner ( $M=2.37$ ,  $SD=0.13$ ), all greater than Non-occluded ( $M=2.27$ ,  $SD=0.11$ ). In other words, the emotional response to the phrase High Mountain Tea for the occlusion mode of Fading is more obvious, and the complete non-occluded text has the least emotional response. From Table 4, it can be seen that there is an interaction between mode of occlusion and emotional vocabulary. Occluding with other objects is found to be significantly related to emotions of calm and joy, but the association with other emotions is quite weak.

The results for emotion  $F(4,180)=35.06$ ,  $p<.001$ ,  $\eta^2_p=0.438$  indicate that there was a significant difference between at least one emotion and the others. The Scheffe Post-Hoc test shows that, under different modes of occlusion, the text phrase reflects calm ( $M=3.30$ ,  $SD=0.16$ ) greater than joy ( $M=2.72$ ,  $SD=0.14$ ) and surprise ( $M=2.65$ ,  $SD=0.14$ ), and all greater than sadness ( $M=1.91$ ,  $SD=0.11$ ) and fear ( $M=1.79$ ,  $SD=0.11$ ). In other words: under the effect all modes of occlusion of the phrase High Mountain Tea, participants tended to report calm emotions, not sad or fearful ones.

Table 4: ANOVA for Mode of Occlusion, Emotional Vocabulary and Gender for the Emotional Response to High Mountain Tea

Source of Variance	SS	df	MS	F	P	$\eta^2_p$
A. Mode of Occlusion, $n=8$	29.71	7	4.24	2.66	.011*	.056
Error	501.56	315	1.59			
B. Emotion, $n=5$	571.27	4	42.81	35.06	.000***	.438
Error	733.21	180	4.07			
A $\times$ B	350.52	28	12.51	7.81	.000***	.148
Error	2018.47	1260	1.60			
C. Gender, $n=47$	1.43	1	1.43	.07	.78	.002
Error	845.29	45	8.78			

\* $p<.05$ , \*\*\* $p<.001$

### 2.6-2 Oktoberfest

From Table 5, it can be seen that there is no significant difference for mode of occlusion  $F(7,315)=2.00$ ,  $p>.05$ ,  $\eta^2_p=0.043$ . From the average values, the three modes of Occluding with small text, Fading and Occluding with other objects ( $M=2.79$ ,  $SD=0.11$ ;  $M=2.78$ ,  $SD=0.12$ ;  $M=2.76$ ,  $SD=0.10$ ) have a relatively greater impact on emotion, while participants' emotional response to non-occluded Oktoberfest is least obvious. It can also be seen that there is an interaction between mode of occlusion and emotion, and a significant correlation exists between Occluding with other objects and the emotion of joy.

The results for emotion of  $F(4,180)=36.82$ ,  $p<.001$ ,  $\eta^2_p=0.450$ , indicate a significant difference for least one emotion among all the others. The Scheffe Post-Hoc test shows that the participants' emotional reaction tendencies to Oktoberfest all modes of occlusion were: calm ( $M=3.40$ ,  $SD=0.14$ ) and joyful ( $M=3.27$ ,  $SD=0.12$ ) greater than surprise ( $M=2.81$ ,  $SD=0.17$ ), and those greater than sadness ( $M=2.04$ ,  $SD=0.14$ ) and fear ( $M=1.85$ ,  $SD=0.14$ ). That is to say, Oktoberfest is associated most with emotions of calm and joy, while it has a lower association with sadness and fear.

Table 5: ANOVA for Mode of Occlusion, Emotional Vocabulary and Gender for the Emotional Response to Oktoberfest

Source of Variance	SS	df	MS	F	P	$\eta^2_p$
A. Mode of Occlusion, $n=8$	17.97	7	2.56	2.00	.054	.043
Error	403.28	315	1.28			
B. Emotion, $n=5$	745.74	4	186.43	36.82	.000***	.450
Error	911.37	180	5.06			
A $\times$ B	534.41	28	19.08	12.95	.000**	.224
Error	1855.93	1260	1.47			
C. Gender, $n=47$	7.56	1	7.56	.39	.531	.009
Error	853.62	45	18.96			

\*\*\* $p<.001$

### 2.6-3 Analysis of Thirty Years

It can be seen from Table 6 that the mode of occlusion results  $F(7,252)=4.25$ ,  $p<.001$ ,  $\eta^2_p=0.105$ , indicate that there is a significant difference between at least one mode and the others. The Scheffe Post-Hoc test shows that emotional response to Thirty Years is most obvious for Fading ( $M=2.98$ ,  $SD=0.17$ ), Occluded by objects ( $M=2.76$ ,  $SD=0.13$ ),

Non-occluded ( $M=2.59$ ,  $SD=0.13$ ), and Occluded by small text ( $M=2.58$ ,  $SD=0.13$ ), while Occluded on the right ( $M=2.19$ ,  $SD=0.13$ ) has the least emotional response. It can also be seen that there is an interaction between mode of occlusion and emotion, with a significant connection between Fading and sadness, and the lowest correlation with joy.

Results for emotion,  $F(4,144)=11.13$ ,  $p<.001$ ,  $\eta^2_p=0.039$ , indicate that at least one emotion among all the others is significantly different. The Scheffe Post-Hoc test indicates that, across all modes of occlusion for the phrase Thirty Years, participants were most inclined to feel calm ( $M=3.36$ ,  $SD=0.19$ ), more so than surprised ( $M=2.57$ ,  $SD=0.17$ ), sad ( $M=2.51$ ,  $SD=0.16$ ) or joy ( $M=2.40$ ,  $SD=0.14$ ), and even more so than fear ( $M=2.11$ ,  $SD=0.15$ ).

Table 6: ANOVA for Mode of Occlusion, Emotional Vocabulary and Gender for the Emotional Response to Thirty Years

Source of Variance	SS	df	MS	<i>F</i>	<i>P</i>	$\eta^2_p$
A. Mode of Occlusion, $n=8$	65.84	7	9.40	4.25	.000***	0.105
Error	567.49	252	2.25			
B. Emotion, $n=5$	275.2	4	68.82	11.1	.000***	0.23
Error	890.14	144	6.18	3		6
A × B	287.15	28	10.25	7.42	.000***	0.17
Error	1391.66	1008	1.38			1
C. Gender, $n=38$	23.25	1	23.25	1.46	.23	0.03
Error	573.32	36	15.92			9

\*\*\* $p<.001$

## 2.6-4 Foreign Culture

The results of  $F(7,294)=6.60$ ,  $p<.001$ ,  $\eta^2_p=0.136$  displayed in Table 7 for mode of occlusion indicate that there is a significant difference between at least one mode and the others. The Scheffe Post-Hoc test illustrates that participants had significantly more response to Fading ( $M=3.13$ ,  $SD=0.13$ ), Occluded by other objects ( $M=3.02$ ,  $SD=0.12$ ) and Bleeding ( $M=2.90$ ,  $SD=0.10$ ), greater than Objects between characters ( $M=2.70$ ,  $SD=0.10$ ), Non-occluded ( $M=2.65$ ,  $SD=0.11$ ), Occluded on the right ( $M=2.62$ ,  $SD=0.10$ ), Occluded by small text ( $M=2.60$ ,  $SD=0.10$ ) and Occluded lower right corner ( $M=2.57$ ,  $SD=0.11$ ). Moreover, it can be seen that there is an interaction between mode of occlusion and emotion, and it is found that occluding with other objects has a significant connection with the emotion of surprise.

Results for emotion  $F(4,168)=16.63$ ,  $p<.001$ ,  $\eta^2_p=0.284$ , indicate that at least one emotion is significantly different from the others. Scheffe Post-Hoc test results show that participants tended to respond with calm ( $M=3.69$ ,  $SD=0.18$ ) more than surprise ( $M=2.96$ ,  $SD=0.14$ ) to the different modes of occlusion for Foreign Culture, both greater than joy ( $M=2.47$ ,  $SD=0.12$ ), sadness ( $M=2.37$ ,  $SD=0.14$ ) or fear ( $M=2.37$ ,  $SD=0.15$ ).



Table 7: ANOVA for Mode of Occlusion, Emotional Vocabulary and Gender for the Emotional Response to Foreign Culture

Source of Variance	SS	df	MS	F	P	$\eta^2_p$
A. Mode of Occlusion, $n = 8$	70.27	7	10.04	6.60	.000***	.136
Error	446.89	294	1.52			
B. Emotion, $n = 5$	459.08	4	114.77	16.63	.000***	.284
Error	158.84	168	6.89			
A $\times$ B	484.11	28	17.29	10.82	.000***	.205
Error	1878.31	1176	1.59			
C. Gender, $n = 44$	5.79	1	5.79	.46	.500	.011
Error	524.71	42	12.49			

\*\*\* $p < .001$

### 2.6-5 Stepping on Land Mines

It can be seen from Table 8 that results for mode of occlusion,  $F(7,294)=3.67$ ,  $p < .001$ ,  $\eta^2_p = 0.08$ , indicate that there is a significant difference between at least one mode and the others. Through the Scheffe Post-Hoc, it was found that Fading ( $M=2.95$ ,  $SD=0.14$ ), Object between characters ( $M=2.79$ ,  $SD=0.14$ ), Bleeding ( $M=2.75$ ,  $SD=0.15$ ) and Occluded by the other objects ( $M=2.74$ ,  $SD=0.13$ ), are all greater than Occluded by small text ( $M=2.73$ ,  $SD=0.14$ ), Occluded lower right corner ( $M=2.60$ ,  $SD=0.15$ ) and Non-occluded ( $M=2.58$ ,  $SD=0.13$ ), which are all greater than Occluded right side ( $M=2.44$ ,  $SD=0.14$ ). An interaction between mode of occlusion and emotion is found, as Occluding with other objects and Object between characters were both more significantly linked with surprise, as was Fading with fear.

The results of  $F(4,168)=9.02$ ,  $p < .001$ ,  $\eta^2_p = 0.177$  for emotion indicate that there is a significant difference between at least one emotion and the others. The Scheffe Post-Hoc test finds that surprise ( $M=3.12$ ,  $SD=0.15$ ) and calm ( $M=2.99$ ,  $SD=0.18$ ) were greater than fear ( $M=2.65$ ,  $SD=0.15$ ), joy ( $M=2.43$ ,  $SD=0.16$ ) and sadness ( $M=2.29$ ,  $SD=0.14$ ).

Table 8: ANOVA Mode of Occlusion, Emotional Vocabulary and Gender for the Emotional Response to Stepping on Land Mines

Source of Variance	SS	df	MS	F	P	$\eta^2_p$
A. Mode of Occlusion, $n = 8$	36.148	7	5.164	3.670	.000***	.080
Error	413.684	294	1.407			
B. Emotion, $n = 5$	177.892	4	44.473	9.027	.000***	.177
Error	827.676	168	4.927			
A $\times$ B	318.667	28	11.381	7.912	.000***	.159
Error	1691.502	1176	1.438			
C. Gender, $n = 44$	8.174	1	8.174	.309	.581	.007
Error	1111.867	42	26.473			

\*\*\* $p < .001$

### 3. Discussion and Conclusion

For these experiments on modes of occlusion, emotional vocabulary, and gender in regard to the emotional response to text phrases, the research results show that the emotional response to text phrases changes in emotional strength due to different modes of occlusion. It is found

that the Fading mode of occlusion is most significant for all the text phrases. To a certain extent, this mode seems to be applicable to the five phrases; perhaps because Fading seems associated with situations and emotions related to the unknown, disappearance, and sadness. Second is Occluding with objects. Perhaps these objects occluding the character strokes help to associate the situation referred to by the text and further arouse certain emotions. In relative comparison, techniques such as Non-occluded, Occluded right side and Occluded lower right corner were less able to arouse the participants' emotional responses, especially the Non-occluded mode, which was highly associated with calm emotion. Overall, non-occlusion was the least emotionally arousing. It is worth mentioning that in addition to Fading for High Mountain Tea, Occluded right side was most obviously linked to the emotion of calm. A question worth investigating is whether this is influenced by some tea brands having already used this design method for their packaging text.

There are significant differences in the emotional responses of the participants to the five text phrases under different modes of occlusion. Aside from the stronger emotional responses of surprise for Stepping on Land Mines, and calm and joy for Oktoberfest, the other text phrases most often evoke calm emotion. In other words, the participants did have different emotional responses to reading these phrases, but they were not very strong. It was also clearly shown that the emotional responses to the five text phrases were least related to fear. What is worth mentioning is the emotional reaction to Stepping on Land Mines; surprise stands out, followed by calm. Whether this truly reflects the real psychological reaction of ordinary people when they encounter land mines is worthy of follow-up discussion.

On the whole, text itself has hidden meanings, but different modes of occlusion play a role in enhancing the text to spark different levels of imagination and emotions in people. The strength of the emotional responses, aroused or weakened, will vary depending on the combination of text and occlusion modes. For example, for the phrase Thirty Years, it was found that there was a significant relationship between Fading and the emotion of sadness, which echoed previous research (Malik et al., 2016; Velasco et al., 2015a, 2015b; Plutchik, 1980; Acton, 1998; Wang et al., 2004). If a designer can skillfully apply the technique of occlusion, it will increase the interest and eye-catching degree of the design without affecting the text recognition. In this paper, occlusion by Fading was found to be generally suitable for all five text phrases. However, the results of this experiment have not been able to specifically summarize whether there are specific texts that are most suited for occlusion. After all, there are so many nouns among the aspect words of a language, so follow-up research can focus on different aspect words, modes of occlusion, and whether viewers have a design background or not, to continue to verify whether there is a difference in emotional response to the text.

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**Contact email:** [ccliao@mail.mcu.edu.tw](mailto:ccliao@mail.mcu.edu.tw)