

# THE STUDY ON PACKAGING ILLUSTRATION AFFECT ON BUYING EMOTION

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## ABSTRACT:

Apart from paying attention to product quality and usability, consumers enjoy the package design of the product when purchasing commodities. Other relevant research has pointed out that using an illustration in the package design can draw more attention to the product. Based on the results of that previous research, this research finds that having illustrations in the package design is one of the factors which influences buying emotion.

This research finds that “expression technique and drawing media” and “simplification of illustration” influence consumer's joyful feeling. Based on a statistical method of investigating food packaging in the market, 167 samples were found that use illustration in the package design. This research points out: (a) High sharp of expression technique (60.48%) and rendering graphic (52.69%) are used mostly on packaging surface design. (b) The association of high sharp expression with drawing media of airbrush painting, and pictorial illustration accounted for the market maximum proportion (36.53%) in the investigation of association of “expression technique and drawing media” and “simplification of illustration”. (c) The association of high sharp expression with drawing media

of colored pencil painting, and rendering graphic causes the highest (grade 4.05) positive buying emotion in terms of happiness, joyfulness, satisfaction, leisure, and expectation. The association of high sharp expression with drawing media of block print painting, and graphic simplification effectively causes negative buying emotion. The finding of the research results suggests that packaging surface design tendency from marketplace presents an inverse relationship with the consumer's buying emotion.

**Keywords: Packaging Surface Design, Illustration, Expression Technique, drawing media, Simplification of illustration, Emotion**

## 1. INTRODUCTION

A consumer gets easily attracted by more complex and novel external characteristic packaging and visual graphic designs. Moreover, this leads consumers to a positive buying emotion and leads them to buy this attractive product (Holbrook and Moore, 1982). Many experts have proposed that hedonic buying occupies the majority of shopping (Ahtola, 1985; Engel et al., 1986). Understanding how the product attracts the consumer's attention from the multitude of commodity packaging is the first step that leads to success. If the packaging can further lead the consumer to a positive buying emotion, the goal of stimulating the sales volume will possibly be achieved. (Donovan and Rossiter, 1982; Sherman et al., 1997). To observe this tendency, the illustration has a more common visual design performance, and it lets the person feel more approachable. The joyful feeling is easily stimulates the buying emotion and this further leads to hedonic buying. Different expression techniques and drawing media of illustrations on packaging may express the different characteristics of work, and they enable the consumer to have different feelings. Moreover, simplification of illustration can distinguish different degrees from photograph to abstract. The related research demonstrated that the simplification of illustration affects the consumer's favor and

value of the commodity (Hsu, 1998). This research proposes that “expression technique and drawing media” and “simplification of illustration” are the most important factors affecting the consumer buying emotion.

This research has three goals: (1) To show how previous research has found “expression technique and drawing media” and “simplification of illustration” to be the important factors dealing with the illustration on packaging that affect the consumer’s buying emotion. (2) To form conclusions about the design trend of “expression technique and drawing media” and “simplification of illustration” via observation of the retail sale of food packaging. (3) To survey the matches of “expression technique and drawing media” and “simplification of illustration” that cause the consumer’s positive and negative buying emotion.

## 2. LITERATURE REVIEW

### 2. 1. EXPRESSION TECHNIQUE AND DRAWING MEDIA

The illustration is refers to its invisible thought or the idea displayed by a concrete visual intermediary material and present it in a clear and easily understood way. The illustration is not only a graphic to explain the item but also a drawing to decorate the layout. (Hu, 1983; Sia, and Cheng, 1996).

This research divides expression technique into three ranks. When the line is average and neat, it is called "high sharp". When line is not average and broken, it is called "low sharp". When the line is between “high sharp” and “low sharp”, it is called "middle sharp". Differing sharps can show different feelings, from carefulness to freedom (Pan, 2003). Moreover, the “drawing media” can affect the picture to deliver the message. Differing drawing media can bring the person the different feelings. For example, the drawing media of colored pencil leads to gentle performance; watercolor leads to graceful performance; oil painting leads to gorgeous and powerful performance.

(Nodelman, 1988; Jan, 1989; Cheng, 1996; Slade, 1998) Therefore, this research has given further discussion to the influence of “expression technique and drawing media” of an illustration on the consumer’s buying emotion.

expression technique	high sharp	middle sharp	low sharp
drawing media	colored pencil	watercolor	ink painting
representatives			

Figure 1: Expression technique and drawing media of illustration on food packaging

## 2. 2. SIMPLIFICATION OF ILLUSTRATION

According to Meyer, R. P. and J. I. Laveson, (1981), simplification of illustration goes from “natural photography”, “pictorial illustration”, “rendering graphic”, or “symbol graphic” to “symbol abstract”.

This research clearly defines simplification of illustration via observation of the illustrations on food packaging (Wang, R. W. Y., and Tsai, P. Y., 2003) :

1. Pictorial Illustration: the point is to present the characteristics in detail and in natural reality along with making every effort to be more similar to the actual object.
2. Rendering graphic: Simplifies certain detail characteristics of the actual object, replacing them with smoother lines. To create a poetic style and a natural style, the object is presented between a fine describe and a simplification method.
3. Graphic simplification: Displays the object shape utilizing a simplified outline, a geometric figure, or a free line utilization.

The correlation research demonstrates that graphic simplification such as a simple color block and line performance gives the image of high value, a young new trend, and modesty (Lee and Chen,

2004) . If pictorial illustration is used, it may increase consumer to recognition of the product and deliver a better product image (Ju, 2003) .

simplification of illustration	pictorial illustration	rendering graphic	graphic simplification
representatives			

Figure 2: Different simplifications of illustrations on food packages

### 3. RESEARCH METHOD

This research classifies “expression technique and drawing media” and “simplification of illustration” of food packaging by the research method of a focus group. A focus group is a group discussion for quality research. It has the characteristics of short time, relatively low cost, flexibility, high response, and brain storming through the group’s interaction. It is considered to be one of the most effective methods to understand the consumer’s feelings, views, opinions, and attitudes. It is deep enough to work with the quantification research and to make up a statistical limit. (Morgan, 1993; Murry and Hammons, 1995). A typical focus group involves gathering 6-12 participants in the same place. This research’s classified focus group is an expert panel consisting of 6 illustrators with specialized knowledge of more than 7 years. On May 12, 2007, the group met face to face for about 1 hour to discuss 167 illustrations on food packaging on the market. According to different “expression technique and drawing media” and “simplification of illustration”, the 167 samples were divided into 20 different types to take stratified random sampling. Then, 20 samples were selected to represent the samples of buying emotion from 20 different types of food package by the random sampling (Fig. 3-5).

drawing media	airbrush painting	airbrush painting	ink painting	technical pen
simplification of illustration	rendering graphic	pictorial illustration	rendering graphic	graphic simplification
representatives				
drawing media	oil painting	watercolor	block print	colored pencil
simplification of illustration	pictorial illustration	rendering graphic	graphic simplification	rendering graphic
representatives				

Figure 3 : Drawing media in high sharp of expression technique

drawing media	watercolor	ink painting	ink painting	acrylic	oil painting
simplification of illustration	rendering graphic	graphic simplification	rendering graphic	rendering graphic	rendering graphic
representatives					
drawing media	block print	colored pencil	crayon		pencil
simplification of illustration	rendering graphic	rendering graphic	rendering graphic		rendering graphic
representatives					

Figure 4: Drawing media in middle sharp of expression technique

drawing media	ink painting	crayon	watercolor
simplification of illustration	graphic simplification	graphic simplification	graphic simplification
representatives			

Figure 5 : Drawing media in low sharp of expression technique

### 3. 1. COLLECTION OF THE ILLUSTRATION ON FOOD PACKAGING AS SAMPLE

This research takes food packaging on the market as sample to discuss illustration and buying emotion. The sample collection is from Carrefour, a retail sales group that is the largest in Europe and the second largest worldwide. The resource and step of sample collection is explained as follows:

1. To collect samples of 10 kinds of food packages in terms of cold storage food, frozen food, canned food, instant noodle, instant food, milk powder, tea, coffee, coffee creamer, and the leisure food from the grocery department in the Ming-Shan branch of Carrefour from December 2006 to May 2007.
2. To choose the food packaging with rectangle elevation, and non-photos illustration as further collection objects, altogether creating a collection of 167 food packaging illustration as samples.

### 3. 2. SAMPLE COLLECTION OF THE BUYING EMOTION

The definition of buying emotion is one kind of subjective intense conscious emotion (Gardner, 1985; Batra and Stayman, 1990). A consumer triggers his or her individual point of view and produces one kind of heart condition, which affects the individual's decision-making and behavior because he or she receives a kind of objective attraction or stimulation. When a consumer purchases a commodity, he or she not only pays attention to the product quality and usability but also, simultaneously, hopes to have a good feeling and good mood in the purchase process. This is because he or she really wants not just a product, but also a satisfying experience. This experience satisfies the consumer's innermost feelings. Izard (1977) chose 10 buying emotions from different mood theories: joy, sadness, interest, anger, guilty, shame, disgust, contempt, surprise, and fear. Plutchik (1980) proposed 8 kinds of buying emotions: anger, joy, sadness, acceptance, disgust, expectancy, surprise, and fear. Holbrook and Batra (1987) proposed 12 kinds of buying emotions: arousal,

suspicion, anger, relax, boredom, fear, desire, social emotion, appreciation, sadness, vexation, and joy. Yoo et al. (1998) proposed a consumer's positive buying emotion as being: attraction, flatulency, satisfaction, excitement, satisfaction and pleasure. Their research also showed the negative buying emotions, including abandonment, ignorance, anxiety, anger, displeasure, and so on.

The scholars above proposed a multitude of buying emotion types. This research tries to narrow down the types, and the steps are shown as follows:

- (1) Select the 29 buying emotions mentioned above by scholars that overlap. Choose 30 consumers who went to Carrefour within the past month and let these consumers pick from the 29 buying emotions. (Fig. 6)

This is an investigation of possible buying emotion which occurs when a consumer purchases a product. When you purchase a product, what is your buying emotion type? You can have multi-choice				
<input type="checkbox"/> satisfaction	<input type="checkbox"/> surprise	<input type="checkbox"/> displeasure	<input type="checkbox"/> social emotion	<input type="checkbox"/> contempt
<input type="checkbox"/> joy	<input type="checkbox"/> fear	<input type="checkbox"/> boredom	<input type="checkbox"/> appreciation	<input type="checkbox"/> guilty
<input type="checkbox"/> relax	<input type="checkbox"/> disgust	<input type="checkbox"/> suspicion	<input type="checkbox"/> vexation	<input type="checkbox"/> abandonment
<input type="checkbox"/> pleasure	<input type="checkbox"/> anxiety	<input type="checkbox"/> desire	<input type="checkbox"/> expectancy	<input type="checkbox"/> ignorance
<input type="checkbox"/> excitement	<input type="checkbox"/> anger	<input type="checkbox"/> attraction	<input type="checkbox"/> interest	<input type="checkbox"/> acceptance
<input type="checkbox"/> arousal	<input type="checkbox"/> sadness	<input type="checkbox"/> flatulency	<input type="checkbox"/> shame	

Figure 6: A consumer possible buying emotion types

- (2) According to the consumer select buying emotions containing positive buying emotions: satisfaction (86.67%), joy (86.67%), pleasure (80.00%), expectancy (80.00%), excitement (76.67%), desire (70.00%), relax (63.33%), interest (56.67%), arousal (36.67%), flatulency (26.67%), appreciation (26.67%), and negative buying emotion: suspicion (46.67%), vexation (46.67%), boredom (40.00%), guilty (36.67%), displeasure (26.67%).

- (3) Use selected 16 kind of buying to design (Likert-Type scales. Further investigate the consumers' buying emotion from weak degree to strong degree (Fig. 7).

This is a questionnaire of illustration on food packaging arouses the degree of buying emotion. Please look at the following samples of illustration on food packaging to choose the suitable degree according to your buying emotion.				
adjective of buying emotion	degree			
	week		strong	
Satisfaction	1□	2□	3□	4□ 5□

Figure 7: Questionnaire of illustration on food packaging arouses the degree of buying emotion

## 4. RESEARCH RESULTS

### 4.1. THE DESIGN TREND OF “EXPRESSION TECHNIQUE AND DRAWING MEDIA” AND “SIMPLIFICATION OF ILLUSTRATION”

The experts from the focus group point out that “high sharp” is the expression technique used most commonly on packaging surface design (60.48%). “Rendering graphic” is the simplification of illustration most commonly found on packing surface design (52.69%), with the next high percentage being “pictorial illustration” (38.92%) (Table. 1).

Table 1: Different percentages of “expression technique and drawing media” and “simplification of illustration”

expression technique	quantity / percentage	drawing media	quantity / percentage	simplification of illustration		
				pictorial illustration quantity / percentage	rendering graphic quantity / Percentage	graphic simplification quantity / percentage
high sharp	101 / 60.48%	airbrush painting	73 / 43.71%	61 / 36.53%	12 / 7.19%	—
		ink painting	12 / 7.19%	—	12 / 7.19%	—
		technical pen	4 / 2.40%	—	—	4 / 2.40%
		oil painting	4 / 2.40%	4 / 2.40%	—	—
		watercolor	4 / 2.40%	—	4 / 2.40%	—
		block print	3 / 1.80%	—	—	3 / 1.80%
		colored pencil	1 / 0.60%	—	1 / 0.60%	—
middle sharp	60 / 35.93%	watercolor	22 / 13.17%	—	22 / 13.17%	—
		ink painting	9 / 5.39%	—	8 / 4.79%	1 / 0.60%
		acrylic	8 / 4.79%	—	8 / 4.79%	—
		oil painting	7 / 4.19%	—	7 / 4.19%	—
		block print	6 / 3.59%	—	6 / 3.59%	—
		colored pencil	5 / 2.99%	—	5 / 2.99%	—
		crayon	2 / 1.20%	—	2 / 1.20%	—
pencil	1 / 0.60%	—	1 / 0.60%	—		
low sharp	6 / 3.59%	ink Painting	3 / 1.80%	—	—	3 / 1.80%
		crayon	2 / 1.20%	—	—	2 / 1.20%
		watercolor	1 / 0.60%	—	—	1 / 0.60%
total			167 / 100.00%	灩 65 / 38.92%	灩 88 / 52.69%	14 / 8.38%

The expression technique and drawing media, high sharp expression with drawing media of airbrush painting, accounts for the market maximum proportion (43.72%), and the next highest proportion (13.17%) is middle sharp expression with drawing media of watercolor.

Further discussion of “expression technique and drawing media” with “simplification of illustration”, the association of high sharp expression with drawing media of airbrush painting and pictorial illustration accounts for the market maximum proportion (36.53%) (Fig. 8a), the next highest proportion is the association of middle sharp expression with drawing media of watercolor and rendering graphic(13.17%) (Fig. 8b), followed closely by the association of high sharp expression with drawing media of ink painting and rendering graphic (7.19%) (Fig. 8c) and high sharp expression with drawing media of airbrush painting with rendering graphic (7.19%) (Fig. 8d). The association of Low sharp expression with drawing media of ink painting, crayon, watercolor and graphic simplification occupies a quite small proportion of the market (1.80%, 1.20%, 0.60%) (Fig. 8e, 8f, 8g).

Comparing the illustrations on food packaging, one finds high sharp expression with drawing media of airbrush painting to be a common technique for the food packaging illustration and matches pictorial illustration (Fig. 8a) to present the sense of real food. It is easy to increase the product image; therefore, this illustration is used in the market most commonly. The association of middle sharp expression with drawing media of watercolor and rendering graphic (Fig.8b) is the common watercolor presentation. It is easier to create the consumer’s familiar feeling and it often is used on food packaging illustrations. High sharp expression with drawing media of ink painting is the use of neat brushwork with the nature performance of rendering graphic (Fig. 8c). This technique gives a person a high value impression and is utilized on traditional commodities such as tea canisters. However, the association of low sharp expression with drawing media of ink painting, crayon and watercolor and graphic simplification (Fig. 8e, 8f, 8g), and this creates the simple feeling.

expression technique	a	high sharp	b	middle sharp	c	high sharp	d	high sharp
drawing media		airbrush painting		watercolor		ink painting		airbrush painting
simplification of illustration	pictorial illustration		rendering graphic		rendering graphic		rendering graphic	
representatives								
expression technique	e	low sharp	f	low sharp	g	low sharp	low sharp	
drawing media		Ink painting		crayon		Watercolor		
simplification of illustration	graphic simplification		graphic simplification		graphic simplification			
representatives								

Figure 8: The illustration of different “expression technique and drawing media” with different “simplification of illustration”

#### 4. 2. DIFFERENT EXPRESSION TECHNIQUE AND DIFFERENT SIMPLIFICATION DEGREES CAUSE THE TYPES OF BUYING EMOTION

The measuring basis is to inspect 20 food packaging illustrations that arouse the type and the degree of buying emotion. The results are as follows (Table. 2): the "high sharp" of expression technique scores 3 points or above in positive buying emotion types: Joy (3.91), pleasure (3.83), satisfaction (3.79), relax (3.67), expectancy (3.00). "Middle sharp" scores 3 points or above in positive buying emotion types: relax (4.14), satisfaction (3.76), pleasure (3.71), joy (3.68). "Low sharp" scores 3 points or above in positive buying emotion types: relax (3.49), satisfaction (3.41), pleasure (3.30), joy (3.17). To conclude, of the different expression techniques, the "high sharp" can arouse the highest level consumers' positive buying emotion (average 2.94).

Table 2 : Positive buying emotion score of different expression techniques

expression technique	satisfaction	joy	pleasure	expectancy	excitement	desire	relax	interest	arousal	flatulency	appreciation	Average
high sharp	3.79	3.91	3.83	3.00	2.98	2.43	3.67	2.95	2.08	1.66	2.08	2.94
middle sharp	3.76	3.68	3.71	2.86	2.67	2.24	4.14	2.69	1.84	1.56	1.87	2.82
low sharp	3.41	3.17	3.30	2.55	2.26	2.16	3.49	2.43	1.58	1.39	1.84	2.51

Not having good packaging design creates a negative buying emotion in the consumer. Compared to construction of the product confidence, not good packaging design brings fierce destruction of the product confidence. It is worthy of noting that “high sharp” also causes most the consumer negative buying emotion (average -1.88). Compared to other presentations, suspicion (-2.19) and boredom (-2.54) are higher (Table. 3) in the “high sharp” of expression technique.

Table 3: Negative buying emotion score of different expression techniques

expression technique	suspicion	vexation	boredom	disgust	displeasure	average
high sharp	-2.19	-1.65	-2.54	-1.36	-1.67	-1.88
middle sharp	-2.00	-1.56	-2.53	-1.33	-1.53	-1.79
low sharp	-1.71	-1.67	-3.01	-1.23	-1.43	-1.81

In analysis, "rendering graphic" will be most able to arouse the consumer's positive buying emotion (average 2.97) (Table. 4). The types of positive buying emotion that score 3 points or above are: relax (4.07), joy (3.92), pleasure (3.89), satisfaction (3.87), expectancy (3.09). "Pictorial illustration" scores 3 points or above in positive buying emotion types: joy (3.80), satisfaction (3.78), pleasure (3.74), relax (3.33). "Graphic simplification" scores 3 points or above in positive buying emotion types: relax (3.61), satisfaction (3.40), pleasure (3.28), joy (3.21).

Table 4: Positive buying emotion score of different simplification degrees

simplification of illustration	satisfaction	joy	pleasure	expectancy	excitement	desire	relax	interest	arousal	flatulency	appreciation	average
pictorial illustration	3.78	3.80	3.74	2.59	2.85	2.11	3.33	2.70	1.87	1.43	2.00	2.75
rendering graphic	3.87	3.92	3.89	3.09	2.87	2.43	4.07	2.93	2.00	1.63	1.99	2.97
graphic simplification	3.40	3.21	3.28	2.52	2.41	2.13	3.61	2.43	1.70	1.51	1.85	2.55

Comparing the three different kinds of simplification degrees, “graphic simplification” causes the highest negative buying emotion degree (average -1.91) (Table 5). The possible reasons are that simplification makes things feel monotonous and tasteless. It is unable to present food’s richness, and this gives the person the machinery feeling (Chen and Yang, 1998) and gives the visual effect of ration and order (Long, 1994). It does not reach the goal of food packaging illustration design.

Table 5: negative buying emotion score of different simplification degrees

simplification of illustration	suspicion	vexation	boredom	disgust	displeasure	average
pictorial illustration	-2.09	-1.63	-2.26	-1.35	-1.65	-1.80
rendering graphic	-2.08	-1.59	-2.44	-1.33	-1.54	-1.80
graphic simplification	-1.93	-1.64	-3.05	-1.32	-1.61	-1.91

The number of food packaging illustrations causing a positive buying emotion score is greater than those causing a negative buying emotion score. This may confirm the research proposing that packaging illustration is able to create the consumer’s buying emotion, therefore influence consumer’s behavior.

Through the analysis above, it may be discovered that the High sharp of expression technique and rendering graphic are easiest to create the positive buying emotion. An analysis of “expression technique and drawing media” with “simplification of illustration” demonstrates that the association of high sharp expression with drawing media of colored pencil and rendering graphic causes the highest score of positive buying emotion (4.05) (Fig. 9a) and the next highest is the association of high sharp expression with drawing media of watercolor and rendering graphic (3.59) (Fig. 9b). As to the reason, colored pencil presents the line or the dot in detail and the color is gently beautiful as compared to other picture materials. However, watercolor’s main characteristic is having transparent, moist, color transformation diversification, and this gives person the exquisite feeling

(Nodelman, 1988; Zhan, 1992; Zheng, 1996; Slade, 1998). Other than this, the association of high sharp expression with drawing media of block print and graphic simplification causes the highest score of negative buying emotion (-2.54) (Fig. 9c), and the next is the association of high sharp expression with drawing media of ink printing and rendering graphic (-2.38) (Fig. 9d). However, the association of high sharp expression with drawing media of colored pencil and rendering graphic (0.60%) as well as the association of high sharp expression with drawing media of watercolor and rendering graphic (2.40%) easily lead the consumer's positive emotion but account for little proportion of the popular designs on the market. On the other hand, the association of high sharp expression with drawing media of ink printing and rendering graphic (7.19%) more easily initiates the negative buying emotion but actually occupies the third high proportion in the market. This proves that market design often presents an inverse relationship with the consumer buying emotion (Table. 1).

expression technique drawing media	a	high sharp		b	high sharp		c	high sharp		d	high sharp	
		colored pencil			watercolor			block print			ink painting	
simplification of illustration	rendering graphic		rendering graphic		graphic simplification		rendering graphic					
grade	positive buying emotion	negative buying emotion	positive buying emotion	negative buying emotion	positive buying emotion	negative buying emotion	positive buying emotion	negative buying emotion	positive buying emotion	negative buying emotion		
	4.05	-1.46	3.59	-1.63	2.07	-2.54	2.20	-2.38				
representatives												

Figure 9: buying emotion grades of different “expression techniques and drawing media” with different “simplification of illustration” (the buying emotion grade 0-5)

## 5. CONCLUSION

From the literature, the authors have discussed how the packaging illustration has the potential influence to consumer behavior, and have presented how “expression technique and drawing media” and “simplification of illustration” form the important attributes of the packaging illustration. Demonstrated through the market popular investigation result, food packaging illustrations using high sharp expression (60.48%) is the most popular, and rendering graphic (52.69%) is the most common. The association of High sharp expression with drawing media of airbrush painting and pictorial illustration accounts for the market maximum proportion (36.53%) in the design popular investigation of “expression technique and drawing media” with “simplification of illustration”.

Consumer’s buying emotion was also investigated. High sharp and rendering graphic cause the most positive buying emotion. They work to incite the emotion types: joy, pleasure, satisfaction, relax, and expectancy. Upon further discussion of “expression technique and drawing media” with “simplification of illustration” and how they influence the consumer’s buying emotion as compared to the popular designs on the market, it is discovered that two investigation results present inverse relations.

The hope is to use two research factors, “expression technique and drawing media” and “simplification of illustration” to develop a survey to measure the responses of consumers connected to the physiological brain electric potential (Event-Related Potential, ERP). Further classification of the arousal degree of emotion, though, is required to compare the emotion cognition and the ERP result. This comparison can precisely measure the consumer’s buying emotion and can make up the subjectivity of research technique of the single cognition.

## FOOTNOTE:

Stratified random sampling: in the research, if a certain sample is very large, one should adopt stratified random sampling. In this way, the N sampling units in the substance are divided into non-overlapped L groups according to some kind of characteristics and these groups might be called strata. After lamination, use the random sampling from each strata to extract the sample again, this is namely for stratified random sampling.

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