

Study on Signal Annotations of Internet Graphic Icons

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Abstract: Nowadays the homepage had provided a global communication platform in Internet situation, but the homepage designers often designed each kind of different icon to enable the user fast to understand its representative significance and function for communicating smoothly. The purpose of this study was to explore the different view to network icon concerning cultural context and gender. Then we used a measurable tool of image scale which developed by Osgood. There were a random samples of 450 to respond the image scale, and 429 returned to back and the return-ratio was 0.93. The results demonstrated the different view to the network icon owing to the different area and different gender, and network icon was the best evaluation which the traditional design infused to network design. Then it is a focal point and direction that the designer will be worth to pay attention to the sign design of Internet in the future.

Key-Words: network icon, signal annotation, image scale, gender, residential district, semiology

1 Introduction

Anthropologic studies had concluded that there are many common languages and symbols among many human clans, and more often than not, same set of identical symbols can be perceived differently by people from different backgrounds. [1] [7] Hermeneutics perceptions assert that the common cultural cognitions can render the similarity of people's behaviours. [12] [13] [19] Since languages and characters can be seen as obstacles when the internet has become a common communication media across the global, homepage icons have become a main medium, and being heavily developed to bypass such obstacles. [14] [16] Therefore, it would be reasonable to understand more about the potential users before setting for designing effective homepage icons.

2 Literature review

The basic theories of sign annotation are based on cultural differences. Taylor's definition of culture saying that: "Broadly speaking, culture is a collective term of what one acquire from the society in which he is living, [9] such as knowledge, religion, arts, moral, laws, custom, and any other ability and hobby." [3] [4] Sociologic study also

points out that "the existence of a culture is determined by the ability of how well people can create and comprehend symbols." The recent studies also stress the positive relationship between cultural background, and precision of cultural annotation [1] [11] [15] [18]. In other words, consumers from different cultures may annotate symbols differently.

This study was also supported by the basic theories of Semiology. The father of the Semiology, Saussure asserted that, "semiology is a scientific study of signs that has been existing in the current social structure". Saussure had also initiated "Duality Theory" (as Fig 1), to illustrate the hidden "cultural" meaning of the signs, and the common timeframe of the language, that is commonly used in the product design. [2] [10] [12] [17] [20]

$$\text{Sign} = \frac{\text{Content}}{\text{Expression}}$$

Fig 1 : Saussure's Semiology Duality Model
(source: Noth, 1995)

Noth also presents a synopsis of a triadic sign tracing its definitions and different terminology

from Plato, to Stoics, to Peirce, to Ogden and Richards [18] [6] [8], and notices that the construction of a semiotic triangle connecting include sign-vehicle, sense, and referent (Fig.2)

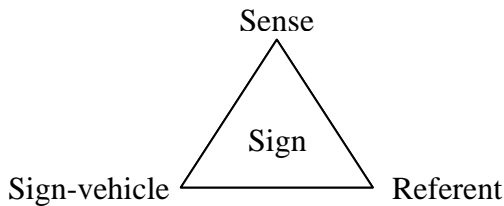


Fig2 The semiotic triangle(Noth ,1995)

Judging from the mentioned theories above, cultural background does affect the annotation of signs. And the appearance of a sign can also be interpreted differently by different individual recipients. This study took webpage email icon as the study sample to which the research and analysis are conducted to probe into the following issues:

1. Discuss on the sign annotation of the internet icon.
2. To evaluate the designing direction of the internet icon.

3 Research Design

Base on the analysis of previous literature and purposes we developed the questionnaire and set out the test as follows

3.1 participants

This study implied conception sampling on central and southern Taiwan, across all education background as University, High School, Junior High School, Primary School, and etc. A total of 450 surveys were issued, and 429 were retrieved, at a rate of 0.93%. (see Table 1 and Table 2)

Table 1 Samples of Study on signal annotation of the Internet email icon: by Location

	north	middle	south	east	total
ma le	9 2.1%	87 20.3%	86 20%	2 0.5%	184 42.9%
female	10 2.3%	123 28.7%	110 25.6%	2 0.5%	245 57.1%
total	19 4.4%	210 49%	196 45.7%	4 0.9%	429 100%

Table 2 Samples of Study on signal annotation of the internet email box: by Education Background

	Univer- sity	Senior High School	Junior High School	Elemen tary school	Total
ma le	21 4.9%	36 8.4%	47 11%	80 18.6%	184 42.9%
female	55 12.8%	72 12.8%	45 10.5%	73 35.7%	245 57.1%
total	76 17.7%	108 25.2%	196 45.7%	153 0.9%	429 100%

3.2. Research Tools

The tools of this research contained the Image Scale and the Email icons questionnaire etc., explaining as follows

3.2.1 Image assessment scale

This study utilized survey method in the experiment of image analysis. The scale of this study was composed of Osgood's 50 pairs of description in which 15 pairs were selected with special reference to Chen Jun-hong's pass works for studying visual signs. [21] [5]

3.2.2 The content and composition of questionnaire

Asked the volume content with compiles: The network email box of sign hermeneutics of this study derived from network searching. We took the study scope and big difference of sign design into consideration, and selected the main scope from the network company or educational and training organization, and focused on the three local websites of mainland China, Taiwan and Hong-Kong as a target of selection. After screening process, we chose the network email icons of three local well-known companies (Table 3) as content of questionnaire.

Table 3 Basic Information of the three selected Email icons on the Internet

icon	Email icon	company	district
a		Internet service company	mainland China
b		educational and raining organization	Taiwan
c		Internet service company	mainland China
d		educational and raining organization	Hong Kong

4 Data collection

To utilize “webpage email icon image scale” as the survey tool to infer the final significant difference test of various factors, and the studies subjects consist of regional and gender differences, and were segmented by northern, central, southern and eastern areas. Nevertheless, the northern and

eastern area subjects were too few, and there the regional comparison is only conducted upon central and southern areas..

5. Research Findings

We could discover the kind of participants evaluation to image design of network email icons and the different hermeneutic result by way of the statistical analysis result mentioned above as follows. (see Table 4, Fig3, Table 5, Table 6.)

5.1 Evaluation of the email icon

5.1.1. Email icon “b” was preferred then others: indicating at traditional email icon that was implied with internet images was highly appreciated.

5.1.2. Email icon “c” scored highly in terms of “strong”, “eye-catching”, and “feature”: meaning that “@” symbol with some simple tuning of the decorative lines was highly appreciated in terms of visual effect.

5.1.3. Email icon “a” did not score highly: indicating that the graphic of an envelope that combines “@” symbols needs to be altered to become more visually accessible.

Table 4 Mean and SD of the results

pair	a		b		c		d	
	mean	sd	mean	sd	mean	sd	mean	sd
Lively—Dull	3.69	1.54	5.38	1.45	5.03	1.88	4.18	1.81
Beautiful—Ugly	3.86	1.50	4.72	1.48	3.99	1.94	4.14	1.68
Gentle—Strong	4.37	1.43	4.60	1.55	3.70	1.81	4.36	1.62
Soft—Hard	3.98	1.63	4.33	1.57	4.08	1.89	4.01	1.68
Innovative—Cliché	3.87	1.64	4.80	1.58	4.72	1.80	4.16	1.66
Sensational—Rational	3.43	1.61	4.33	1.58	4.44	1.75	3.95	1.84
Modern—Traditional	4.26	1.98	4.79	1.78	4.80	1.76	4.40	1.82
Elegant—Vulgar	3.79	1.57	4.54	1.47	3.83	1.69	4.13	1.67
Natural—Artificial	3.50	1.79	4.27	1.74	4.25	1.87	3.82	1.84
Gorgeous—Simple	3.21	1.68	4.26	1.58	4.35	1.77	3.94	1.74
Eye-catching—Hidden	3.67	1.81	4.68	1.71	5.05	1.84	4.14	1.86
Posh—Cheap	3.80	1.66	4.55	1.56	4.57	1.70	4.19	1.69
Feature—Plain	3.56	1.86	4.57	1.78	4.96	1.82	3.86	1.85
Likable—Hateful	3.97	1.68	4.81	1.66	4.37	1.96	4.17	1.79
Technology—Manual	4.54	1.73	4.94	1.62	4.19	1.91	4.98	1.77

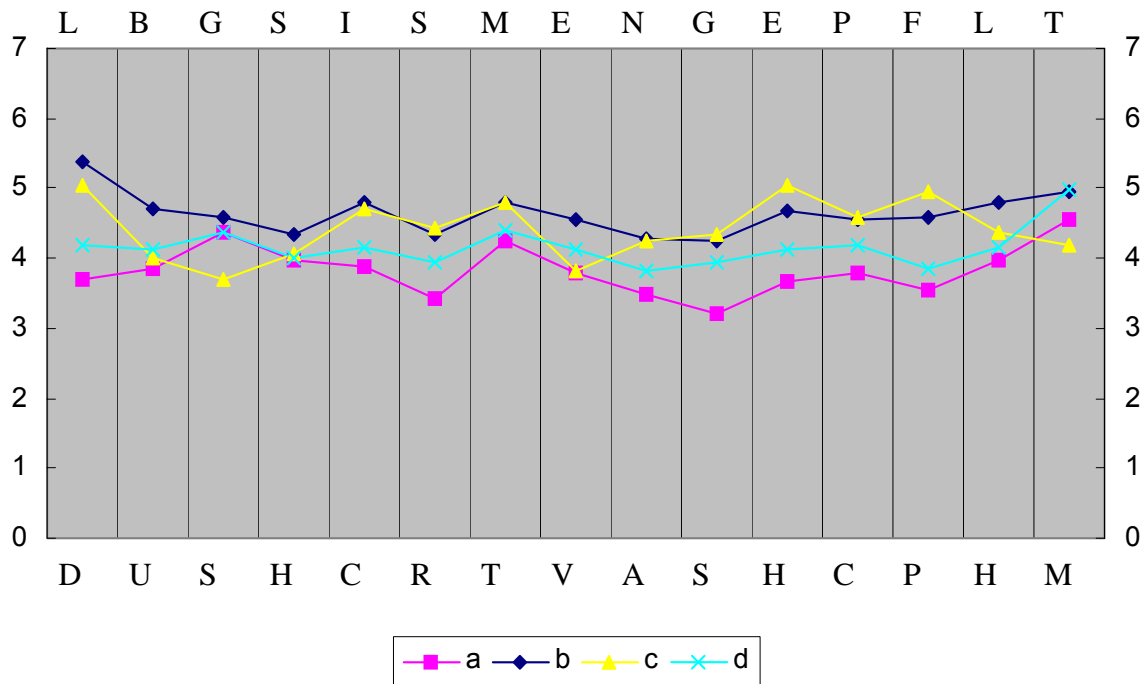


Figure 3: Linear Graph of the research findings

5.2. Research finding of gender factor to the annotation of the webpage signs

5.2.1 Email icon “ a” was significant by the image scale on “lively – dull”, “natural – artificial” , and “gorgeous – simple”.

5.2.2 Email icon “ b” was significant by the image scale on “ sensational – rational”, “elegant – vulgar”, “ personality – popularized” and “likable – hatful”.

5.2.3 Email icon “c” was significant by the image scale on “ elegant – vulgar” , “eye-catching – hidden” , “personality – popularized” and “likable – hateful”; lastly,

5.2.4 Email icon “d” did not show any significant difference on the image scale. Further analysis reveals that “a”, “b”, and “c” are scaled as the intrinsic image scale’ while Email icon d’s image scale items, and the average value was not quite significant.

Table 5 The p-value of image scale by gender

Icon	pair	p-value	mean	
			ma le	female
a	L□U	0.012*	3.91	3.53
	N□A	0.018*	3.26	3.68
	G□S	0.008**	3.45	3.02
b	S□R	0.027*	4.57	4.95
	E□V	0.010*	4.31	4.76
	F□P	0.001**	4.50	5.03
c	L□H	0.040*	4.61	4.93
	E□V	0.006**	3.56	4.02
	E□H	0.014*	4.80	5.24
	F□P	0.001**	4.62	5.22
d	L□H	0.003*	4.05	4.61
	All not achieved significant differences			

*p<0.05
**p<0.01

5.3. Regional factor on webpage sign’s image perception

For email icon “ a”, the comparison between all image scales and the dwelling region was significantly different. While email icon b’s image scale was not significantly different to all regional factors. For email icon “ c”, the image scales that was significant compare to the regional factors were “innovative – cliché”, and “personality – popularized”. Lastly, for email icon d, the significant image scales differ from the regional factors were: “lively – dull”, “innovative – cliché”, and “natural – artificial”.

Table6 The p-value of image scale by location

Icon	pair	p-value	Mean	
			middle	south
a	L□U	0.000**	3.28	4.02
	B□U	0.000**	3.47	4.22
	S□H	0.000**	3.54	4.56
	I□C	0.000**	3.33	4.33
	S□R	0.000**	2.99	3.86
	M□T	0.000**	3.64	4.94
	E□V	0.000**	3.36	4.22
	N□A	0.000**	2.98	3.95
	G□S	0.000**	2.72	3.68
	E□H	0.000**	3.41	3.91
	P□C	0.001**	3.48	4.13
	F□P	0.000**	3.03	3.99
	L□H	0.000**	3.47	4.46
T□M	0.000**	4.20	4.88	
b	All not achieved significant differences			
c	I□C	0.030*	5.11	4.44
	F□P	0.031*	5.33	4.66
d	L□U	0.013*	3.91	4.50
	I□C	0.001**	3.81	4.47
	N□A	0.002*	3.44	4.14

*p<0.05

**p<0.01

6 Conclusions and Suggestions

We draw up a few conclusions and suggestion according to the research finding mentioned above as follows:

6.1. Conclusions

611 The network icon which infused traditional design to network graph was received the best appraisal.

612 There were some hermeneutics significant differences of image scale in Graph of Network email Sign on gender. The finding demonstrated a difference between gender and content of sign hermeneutics, in other words, it revealed a difference between gender and operational process of perception.

613 There were some hermeneutics significant differences of image scale in Graph of Network Mailbox Sign on residential district.

62 Suggestions

621 We should consider that the design of network sign which connected traditional cognition with modern feeling in graph and matched with the principle of colors could increase the higher appraise of receiver.

622 We should adopt the neutral design in designing network email sign to extinguish the between the disparity between gender and sign hermeneutics.

623 We should develop the positive adjectives of sign scale, such as lively, beautiful, temperate, and so on, to extinguish the disparity between residential district and sign hermeneutics.

In brief, the target of network email sign is worldwide, if we could extinguish the disparity between residential district and sign hermeneutics as far as possible, we would provide the reference of designing network sign for various companies.

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