

Effect of Presentation Forms on the Recognition of Fashion Style

Mariko SUEHISA, Tetsuya SAKAI, and Toyoko SAKAI**

**Kyoritsu Women's Junior College Faculty of Science of Living 2-2-1 Hitotsubashi Chiyoda 101-8433
JAPAN,*

*** University of the Air Faculty of Liberal Arts Chiba 260-8586 JAPAN*

Abstract: we reported the results of an investigation on how female college students determined whether an apparel fashion was new or old. And it was clarified that the criteria for judgment was based on their fashion experiences gained during puberty. The questionnaire used in the investigation was conducted as several apparel fashion images selected from different periods were shown to the respondents who could experience the trend of those fashions. In this paper, we dealt with a set of apparel fashion images, which were assumed that the respondents were for the most part unfamiliar with those images. Investigations were carried out twice, in 1992, 2001, by using the same apparel fashion images chosen at random from French mode magazines published in the 1950's .

The purpose of this study is to examine how the respondents determined whether the apparel fashion images belong to the new or old production period, although images were unfamiliar to them, at the same time, to focus on the image factors which influence on the decision.

As a conclusion, it thought as follows:

- 1) Young female students, whose age is 20 years more or less, have a criterion about the apparel fashion trend based on their experience of fashion trend during puberty.
- 2) They are accustomed to apply the criterion, when they compare two apparel fashion images from the point of view of the novelty even for the unfamiliar images.
- 3) The silhouette of clothes gives almost comparable information about the fashion trend to the photograph of mannequin wearing clothes with some background sight.
- 4) The background sight might play an important and somehow delicate role through the combination with the figure of mannequin and background sight.

Key words: *apparel, fashion, questionnaire, image, old and new sense,*

1. Introduction

In the previous study, we reported the results of an investigation on how female respondents determined whether an apparel fashion was new or old.

Respondents were randomly selected from female ranging in age from 60s to 20s. The questionnaire used in the investigation was conducted as several apparel fashion images chosen from different periods were shown to the respondents who could experience the trend of those fashions.

And it was clarified that the rate of correct answer decreased with the increase of age. Namely 20s female group showed the highest rate of correct answer, while 60s female group gave a low rate, which was almost the same rate happened at random choice. Thus we assumed that the criterion for the judgment was elementarily based on their fashion experiences gained during puberty.

In this paper, we dealt with a set of apparel fashion images, which were assumed that the respondents were for the most part unfamiliar with those images. Investigations were carried out three times, in 1992, 2001 and 2003, by using the same apparel fashion images chosen at random from French mode magazines published in the 1950s .

The purpose of this study is to examine how the respondents determined whether the apparel fashion images belong to the new or old production period, although images were unfamiliar to them.

At the same time, our interest is focused on the image factors which influence on the decision. Thus we prepared four presentation forms, that is, “Form A” consisting of original fashion photographs, “Form B” consisting of mannequin wearing apparel without back sight, “Form C” consisting of apparel only cut out of original photographs and “Form D” the silhouette of the apparel. (fig.1, fig.2 fig.3 fig.4) Comparing results obtained by the use of four different presentation forms, we discussed about what image factor might affect on the recognition of apparel fashion.



Fig.1 “Form A” used for the investigation (1992. 2001)
 Fig.2 “Form B” used for the investigation (2003)
 Fig.3 “Form C” used for the investigation (2003)
 Fig.4 “Form D” used for the investigation (2003)

2. Experiment

We conducted two experiments.

2-1Experiment 1

At the first experiment, we used Form A in which 11 fashion image photographs picked out fashion magazine, Vogue, published in 1951 and 1958 (fig.1) were arranged at random.

Naturally, used images were divided into two groups. One group contained fashion images announced in 1951, photograph number 1.2.4.6.9 in Fig.1 and then the group was named “Old” in this research. Another group contained fashion images in 1958, photograph number 3.5.7.8.10.11 in Fig.1 and named “New” group.

The questionnaire with “Form A” was conducted twice, in 1992 and in 2001. Respondents group for the questionnaires were the sophomore of female college student at that time. The number of respondents was 72 in 1992 and 102 in 2001. They were asked to determine whether an apparel fashion image belonged to “New” or “Old” group.

2-2 Experiment 2

At the second experiment, we used three presentation forms modified from the original presentation form. Original fashion photograph was named “Form A” and three modified presentation form were named “Form B”, “Form C”, “Form D”. “Form B” was consisting of mannequin wearing apparel without back sight(fig.2), “Form C” was consisting of apparel only cut out of original photographs (fig.3)and “Form D” the silhouette of the apparel(fig.4). The questionnaire with three presentation forms was conducted in 2003. We divided respondents into three groups. Each of three presentation forms was provided to the different respondent group and questioned whether each of apparel fashion images belonged to the “New” or “Old” group. The number of respondents, who were all the second year college students, was 67 for “Form B”, 52 for “Form C”, and 59 for “Form D”.

3. Results and Discussions

3-1 Result of Experiment 1

Table1 gives the distribution of relative frequency of the correct answer for twice investigations performed in 1992 and 2001. The average number of correct answers per person was calculated as 3.78 for the first investigation in 1992 and 6.78 for the second investigation in 2001. And we compared the average number of correct answers above mentioned with the average number of correct answers, 5.50, which is expected for the case where the decision is done at random. As a result, the difference between 3.78 and 5.50 or 6.78 is large enough in terms of statistics. Test of significance was estimated as 1% level of significance for each investigation.

Table1. Distribution of relative frequency for correct answers for twice investigations (%)

Number of correct answers	0	1	2	3	4	5	6	7	8	9	10	11
Relative frequency	0	13.9	12.5	30.6	11.1	11.1	8.33	5.56	4.17	2.78	0	0

(1992)

Number of correct answers	0	1	2	3	4	5	6	7	8	9	10	11
Relative frequency	0	2.0	2.0	0	10.8	9.8	13.7	24.5	17.6	12.7	5.9	1.0

(2001)

These investigations showed completely opposite results when the same fashion images were shown to respondents. In 1992, respondents had a tendency to make more mistakes in the judgment of new or old and, in 2001, respondents were apt to make the judgment more correctly. Namely the criterion for the judgment was reversed for about ten years. The judgment given by 20s age female group in 1992 clearly coincided with the

fashion trend from 1982 to 1992. On the other hand, the judgment given by 20s age female group in 2001 also reflected the fashion trend between 1991 and 2001. This fact was reasonably elucidated by the effect of fashion trend as the background for respondents. Thus it was also confirmed with our assumption that the criteria of the respondents were formed on the basis of the fashion trends which they experienced during puberty and the criteria were applied to their judgment of fashion images, regardless of whether the fashion images were familiar or not to the respondents.

3-2 Result of Experiment 2

At first, we show the frequency distribution of correct answer for the result of the investigation performed in 2001 (shown in table2 and fig.5).

Table2. Distribution of relative frequency for correct answers for the investigation of “Form A” (%)

Rate of correct answers	0	9.1	18.2	27.3	36.4	45.5	54.5	63.6	72.7	81.8	90.9	100
Relative frequency	0	2.0	2.0	0	10.8	9.8	13.7	24.5	17.6	12.7	5.9	1.0

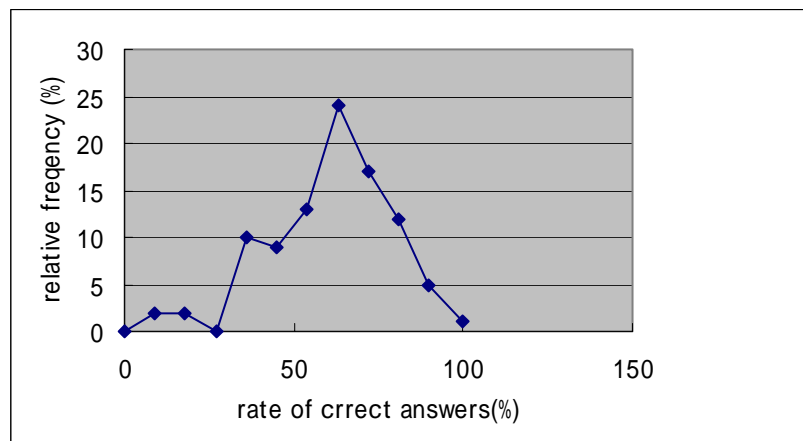


Fig.5. Distribution of relative frequency for correct answers for the investigation of “Form A”

The mean of the rate of correct answer was calculated as 61.5% and the standard deviation as 18.3%. It seems that this distribution is similar to the binomial type. So, we tried to apply the binomial model on the judgment behavior. Thus we assume that a respondent determines whether an apparel fashion image belongs to “New” or “Old” group

by the probability P. When the respondent do that for 11 image samples, the probability by which the number of correct answers becomes X piece is

$${}_{11}C_X \cdot p^X \cdot (1 - p)^{(11 - X)} \cdot \dots \cdot (1)$$

Here we put the mean of the rate of correct answer, 0.615, as P into the above formula Eq.1, calculated the frequency distribution of the rate of correct answer, and summarized in table3. Fig.6 gives a comparison of the result of table2 with the result of table3. It is evident from fig.6 that the distribution of the rate of correct answer

for “Form A” could be described with the binominal model.

Table3. Distribution of relative frequency for correct answers for the result of binomial model (%)

Rate of correct answers	0	9.1	18.2	27.3	36.4	45.5	54.5	63.6	72.7	81.8	90.9	100
Relative frequency	0	0	0	0.8	3.3	8.9	17.4	24.0	23.3	15.1	5.8	0

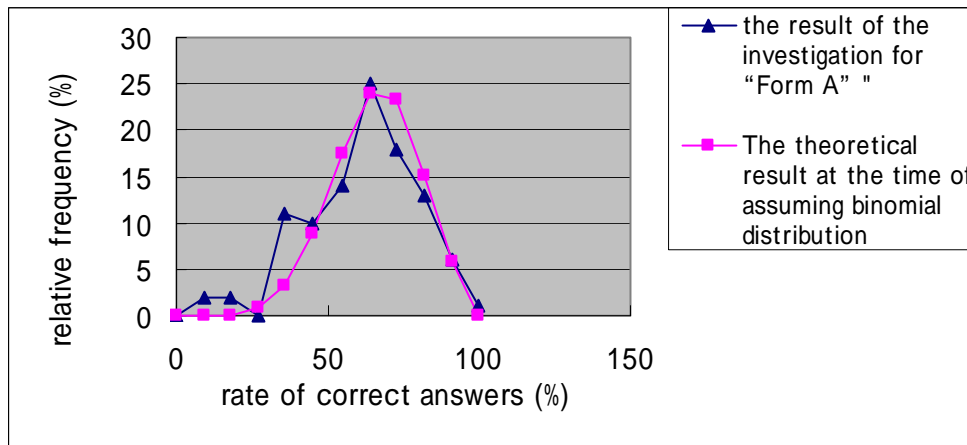


Fig.6. Distribution of relative frequency for correct answers for the result of “Form A” and the result of binomial model

In the same way, using the binomial model, we put the mean of the rate of correct answer experimentally obtained for three presentation forms into Eq.1 and calculated the frequency distribution of the rate of correct answer for each case as described on table4,5,6 and fig.7,8,9. As a result, it seems clear that the distribution of the rate of correct answer for all of presentation forms shows a good agreement with the result of binominal model, in other words, the young 20s female respondents commonly have a similar criterion as to the judgment of fashion image.

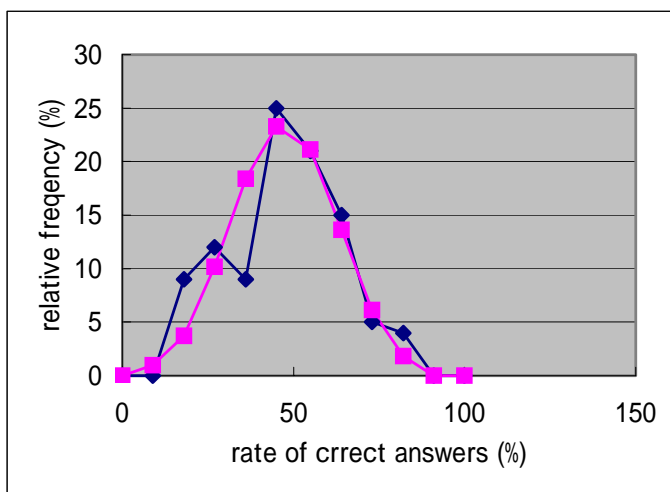


Fig.7. Distribution of relative frequency for correct answers for the result of “Form B” and the result of binomial model

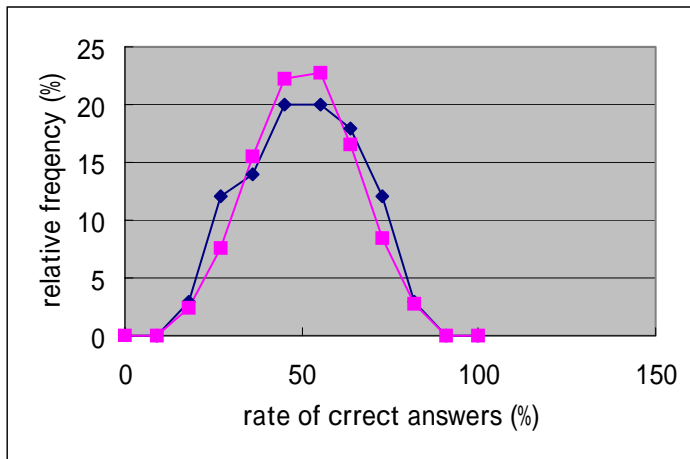


Fig.8. Distribution of relative frequency for correct answers for the result of “Form C” and the result of binomial model

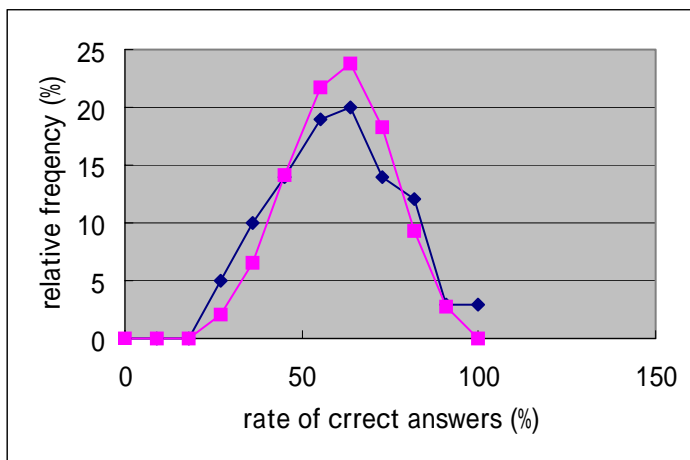


Fig.9. Distribution of relative frequency for correct answers for the result of “Form D” and the result of binomial model

Table4 Distribution of relative frequency for correct answers for the result of “Form B” and the result of binomial model

Rate of correct answers	0	9.1	18.2	27.3	36.4	45.5	54.5	63.6	72.7	81.8	90.9	100
Relative frequency	0	0	9.0	11.9	9.0	25.4	20.9	14.9	4.5	4.5	0	0
Theoretical frequency	0	1	3.7	10.2	18.4	23.3	21.1	13.6	6.1	1.8	0	0

(%)

Table5. Distribution of relative frequency for correct answers for the result of “Form C” and the result of binomial model

Rate of correct answers	0	9.1	18.2	27.3	36.4	45.5	54.5	63.6	72.7	81.8	90.9	100
Relative frequency	0	0	3.8	11.5	13.5	19.2	19.2	17.3	11.5	3.8	0	0
Theoretical frequency	0	0	2.5	7.6	15.6	22.3	22.7	16.5	8.4	2.8	0	0

(%)

Table6. Distribution of relative frequency for correct answers for the result of “Form D” and the result of binomial model

Rate of correct answers	0	9.1	18.2	27.3	36.4	45.5	54.5	63.6	72.7	81.8	90.9	100
Relative frequency	0	0	0	5.1	10.2	13.6	18.6	20.3	13.6	11.9	3.4	3.4
Theoretical frequency	0	0	0	2.1	6.6	14.2	21.7	23.8	18.2	9.3	2.8	0

(%)

Comparing these results to each other, it is shown that the rate of correct answer for Form D is very close to that for “Form A”, but the rate of correct answer for “Form B” and Form C goes down considerably, as shown in Table7. On the whole, it seems certain that the silhouette of apparel is the most important factor in the judgment of apparel fashion whether it being new or old.

Table7. Mean value and Standard deviation for each investigation

	“Form A”	“Form B”	“Form C”	“Form D”
Mean value	61.5	47.5	50.5	60.5
Standard deviation	18.3	16.6	18.0	18.0

(%)

Based on the above observation, it was examined statistically to compare the mean value of the rate of correct answer for the investigations using “Form A”, “Form B”, “Form C” and “Form D” with the mean of the rate of correct answer 50(%) for the case of random judgment.

When taking out n samples from an event with a certain probability distributions and calculating the mean value of n samples, if the size of n is large enough, it is known by the central limit theorem that such mean value will follow a normal distribution. The mean value of such a normal distribution is equal to the original probability distributions, and it also turns out that the standard deviation is the value which is equal to a broken number of the standard deviation for the original probability distributions by the square root of n.

Applying the theory mentioned above, we carried out the test of significance for the difference between four rates of correct answer.

As for the judgment at random, the mean of the rate of correct answer is considered to become 50 (%) and standard deviation to become 15 (%).Using the above theory, in the case of “Form D” (sample number n=59), it is thought that the mean value should follow the normal distribution with the mean value 50 and the standard deviation 1.95 ($=15\sqrt{59}$). The mean value experimentally obtained is 60.5, thus there is a difference of 10.5 from the case of the judgment at random (the mean value 50) and the difference is over 5 or more times of the standard deviation 1.95. So, the probability where the mean value becomes 60.5 might be very small, or it could be said that the difference of 10.5 is sufficiently significant in terms of statistics. That is, the importance of silhouette factor is certified in the sense of statistics.

In the case of “Form C” (n=52), the mean value obtained from experiments may follow the normal distribution with the mean value 50 and the standard deviation 2.08 ($=15\sqrt{52}$). The mean value experimentally obtained is 50.5

and the difference $0.5(=50.5-50)$ is so small compared with the size of the standard deviation, 2.08, that it is considered this difference is not statistically significant. Similarly, in the case of “Form B”, no significant difference is found compared with the case of random judgment as to the rate of correct answer.

These facts suggest that the back sight might play an important role to the recognition of fashion trend through the combination with the figure of mannequin and the details of clothes.

We obtained four sets of data including the rate of correct answer to each of fashion images for four presentation sample sets, “Form A”, “Form B”, “Form C” and “Form D”. Thus the correlation coefficient between data series was calculated to each other as shown in Table 8.

Table 8 Correlation coefficient matrix of “Form A”, “Form B”, “Form C” and “Form D”

	A	B	C	D
A	1	0.16	0.67	0.61
B	0.16	1	0.52	0.64
C	0.67	0.52	1	0.80
D	0.61	0.64	0.80	1

It is interesting to note that correlation coefficients for the pair of A&C and of A&D are relatively high compared with that for the pair of A&B. But the average of the rate of correct answer for the case “Form C” is very similar to that for the random trial, as discussed above, while the average of the rate of correct answer for the case “Form D” is almost the same to that for the case “Form A”, which is high enough in the sense of statistics.

Here we tried to estimate the information used by the young female respondent to look for the characteristics of the fashion image fitting to her criterion. As a first step, it was assumed that such information might be described with a linear combination of some independent factors.

Then, applying the principal component analysis on the data of Table 8, we tried to find out some factors which are effective for the decision whether an apparel fashion belongs to the “New” group or the “Old” one. Obtained Eigenvalues for the factors are summarized as shown in the Table 9.

Table 9 Eigenvalues drawn from the correlation coefficient

	Factor1	Factor2	Factor3	Factor4
Eigenvalue	2.743	0.854	0.225	0.178

Table 9 suggests two factors may be effective for the decision, in accordance with the size of Eigenvalue. This result seemingly coincides with the conclusion obtained in the former discussions. At least the silhouette of wearing clothes should be an important factor implying some characteristics of apparel fashion trend.

4. Conclusions

As a conclusion, it thought as follows:

- 1) Young female students, whose age is 20 years more or less, have a criterion about the apparel fashion trend based on their experience of fashion trend during puberty.
- 2) They are accustomed to apply the criterion, when they compare two apparel fashion images from the point of view of the novelty even for the unfamiliar images.

3) The silhouette of clothes gives almost comparable information about the fashion trend to the photograph of mannequin wearing clothes with some background sight.

4) The background sight might play an important and somehow delicate role through the combination with the figure of mannequin and back sight.

References

1. Kanako huji, Sakai tetsuya, and Sakai toyoko: Women's presentation of chronological changes in apparel fashions: Journal of home economics of japan: 47(6),589-597: Tokyo
2. Mariko suehisa, Sakai tetsuya, and Sakai toyoko: Effect of fashion trends experienced during puberty on the formation of perceptivity for old and new fashions: Journal of home economics of japan: 53(6)575-580: Tokyo
3. Siba sukeyori: Statistical terminology dictionary: sinyousha: Tokyo