Proceedings of the 15th International Conference on Manufacturing Systems – ICMaS
Published by Editura Academiei Române, ISSN 1842-3183

"Politehnica" University of Bucharest, Machine and Manufacturing Systems Department
Bucharest, Romania, 26–27 October, 2006

EXPERIMENT FOR TESTING THE CONCEPT OF TECHNOLOGICAL RITUAL

Andrei DUMITRESCU

Abstract: *The author of the present paper introduced in a previous paper the concept of technological ritual. The technological ritual is the methodology of using a product besides its basic aim in order to achieve psychological satisfaction at both perceptual and central level. The aim of technological ritual is to satisfy two types of needs: feeling that everything is under man's control and preservation of connection to childhood. Later, he designed an experiment for testing the validity of this concept. After the analysis of results, it was discovered that products are used in technological rituals. But only the need of playing was clearly validated. Also, some of the product characteristics required by technological ritual were confirmed.*

Key words: *technological ritual, user need, product characteristics.*

1. INTRODUCTION

In a previous paper, the author introduced the concept of technological ritual as a complementary to use-paradigm and stereotype [1].

The *technological ritual* is the methodology of using a product besides its basic aim in order to achieve psychological satisfaction at both perceptual and central levels.

The *use-paradigm* is the methodology of using product in order to obtain the desired result in conditions of effectiveness, efficiency and basic satisfaction. Effectiveness refers to the extent to which a goal, or task, is achieved. Efficiency refers to the amount of effort required to accomplish a specified goal. Basic satisfaction refers to the satisfaction given directly by the achieved result.

Stereotype is the normalised methodology of performing a task with a product intended to be learned easily and consistently. After a short practice, stereotype is acquired and can be done at subconscious level. So, the stereotype improves productivity.

The aim of technological ritual is to fulfil specific human needs. There are two types of needs that technological ritual fulfils:

- feeling that everything is under man's control;
- preservation of connection to childhood.

The object that allows the development of a technological ritual should have specific characteristics:

- small enough to be considered personal;
- to stand out in its' class;
- to confer a recognisable status;
- fashion-influenced or eternal classic;
- sophisticated enough to exceed use-paradigm.

The definition of technological ritual, the needs it satisfies and the characteristics of objects that can be used in technological rituals were synthesised from sparse information from dedicated literature plus the author's additions. The author's approach, as well as those of other authors, was a theoretical one. Logical thinking and personal observations was the base of the author's approach.

But experimental testing should validate this theory. In this regard, an experiment was designed and carried out. Its description and the results are presented in the following chapters.

Regarding the needs satisfied by the technological ritual, it should be mentioned the interpretations of Jean Baudrillard, Peter Dormer and Deran Sudjic. Baudrillard considers that people are afraid of time continuity and they give an alternative use to products in order to cope with this fear [2]. Dormer introduced the concept of gratuitous difficulty as a strategy to break the continuity of time [3]. Sudjic pointed out that the click, heard when a button is pressed, is very reassuring: the man is in command [4].

Regarding the playfulness of some products, Abraham Moles warned about the tendency to make useless products designed just for adult playing [5].

2. EXPERIMENT DESIGN

The experiment was aimed for verification of the following hypotheses:

- technological ritual concept is a valid concept;
- technological ritual has the purpose to fulfil either the psychological need of safety or the need of adult play;
- tool of technological ritual has the characteristics mentioned above.

In this regard, a questionnaire was designed. It has four sections:

1. alternative use of products;
2. playing with products (open questions);
3. playing with products (closed questions);
4. respondent profile.

The first section was pointed to determine: products that have alternative uses; these alternative uses and the feelings that are associated to alternative uses. The second section was intended to establish the products used for adult play, the way they are used for play and the feelings that are associated to adult play.

The third section was intended for precise determination of products used for adult play and the intensity of playing.

The forth section was introduced to find out the respondent's profile (gender and age).

3. EXPERIMENTAL RESULTS

3.1. Respondent's profile

The questionnaire was filled by 267 persons (122 males and 145 females). The age distribution is presented in Table 1.

The proportion of young persons is relatively high and this fact influenced the results.

3.2. Alternative uses of products

A large proportion of people mentioned that they have not alternative uses for products. Actually, 108 persons (40.45%) use products in alternative ways and 159 (59.55%) do not exploit products in other way than indicated by manufacturers.

The top of products used in an alternative way is indicated in Table 2.

The varia category includes items like cellotape, paper, notepad, paper clip, soft drink bottle, pliers, adjustable wrench, fork, drinking glass, razor blade, cloth peg, blanket, plastic bag, clock etc. Usually, the alternative use was inspired by the shape of the product. For example, the pencil is used for arranging long hair. The spoon is employed as a shoehorn. The cigarette lighter is used for opening beer bottles. The most innovative new use was discovered for paper clips. They are bent and utilised as hooks for Christmas ornaments.

There were discovered only two uses shared by many products. The two shared uses are the fastening-unfastening with screws and the opening of beer bottles.

In the case of cell phone, the majority of respondents (13 of 16) confused the alternative operations with additional functions, like incorporated games and alarm clock.

Table 1

Respondent's age distribution

Age segment	Respondents	Percentage [%]
< 20	20	7.49
20–35	199	74.53
36–50	41	15.36
> 50	7	2.62

Table 2

Products used in an alternative way

Product	Number of respondents	Percentage [%]
Ball pen / pencil	22	20.37
Cell phone	16	14.81
Knife	11	10.19
Cigarette lighter	7	6.48
Keys	4	3.70
Remote control	4	3.70
Tooth paste	4	3.70
Tooth brush	4	3.70
Spoon	3	2.78
Jewels	3	2.78
Varia	30	27.80

Table 3

Special feelings experienced when products are used in alternative ways

Feeling	Number of experiences	Percentage [%]
Tranquility	14	46.67
Satisfaction	6	20.00
Well-being	4	13.33
Comfort	2	6.67
"I feel inventive"	2	6.67
Wasting time	1	3.33
Safety	1	3.33

Table 4

Products used for playing (revealed by open questions)

Product	Number of respondents	Percentage [%]
Ball pen	60	31.41
Cell phone	37	19.37
Jewels	27	14.14
Keys	24	12.57
Cigarette pack	10	5.24
Remote control	7	3.66
Earrings	6	3.14
Cigarette lighter	5	2.62
Jewel chain	4	2.09
Varia	11	5.76

The analysis of alternative uses revealed that 33 cases were actually ways of playing. 33 cases mean 30.55% from the total of alternative uses. It is not the predominant mode, but a significant one.

A special feeling was experienced only by 30 respondents (27.78%) from those 108 that give an alternative use to products. The special feelings are presented in Table 3.

It is interesting to observe that 12 cases of tranquillity experience were associated to playing. Playing was perceived as a good way to calm down and to recover from a tense state.

3.3. Playing with products (open questions)

When asked if they play with products, the majority of respondents confessed that they do. 191 persons (71.54%) declared that they play with products and 76 persons (28.46%) that they do not.

The products that are used for playing are presented in Table 4. More illustrative is the histogram presented in Fig. 1. The varia category includes very different items like pocket knife, paper, eyeglasses, cosmetics container, zipper, eraser, pencil box, hairpin, rubber band and even the personal computer.

As can be observed, the products used for playing are small and perceived as personal. From the products in top, only the cigarette pack is a product that cannot be considered personal.

The most usual ways to play with products are indicated in Table 5.

Revolving objects is the most common way to play with products. The order of products according to the

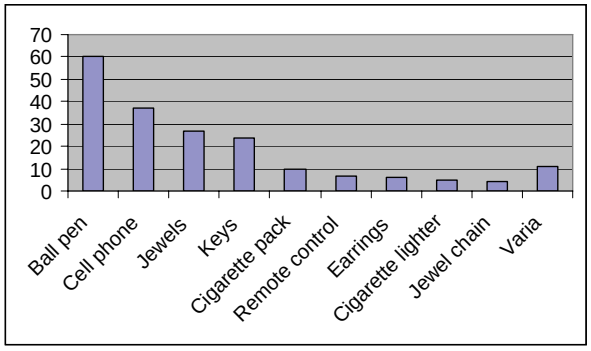

Fig. 1. Products used for playing.

Table 5

Ways of playing with products

Mode of playing	Number of respondents	Percentage [%]
Revolving	107	56.02
Opening-closing	21	10.99
Games	20	10.47
Disassembly	9	4.71
Making noise	7	3.66
Sucking the cap	7	3.66
Varia	20	10.47

Table 6

Special feelings experienced when products are used for playing

Feeling	Number of respondents	Percentage [%]
Tranquility	73	38.22
Concentration	8	4.19
Amusement	3	1.57
Varia	7	3.66
No feelings	100	52.36

frequency of revolving is: jewels (92.59%), cigarette pack (90%), earrings (83.33%), remote control (71.43%), keys (66.67%), cigarette lighter (60%), cell phone (43.24%) and ball pen (36.67%).

Opening-closing a product or turning on-off was another way to play shared by many products (ball pen, cell phone, cigarette lighter and pencil box).

The games on cell phone were mentioned again by mistake.

The respondents that play with products experienced during playing the feelings presented in Table 6.

More than half of the respondents did not mention any special feeling experienced during playing. This means the playing was satisfying by itself. Most of the rest enjoyed the tranquillity.

3.4. Playing with products (closed questions)

After the respondents had indicated freely the products they use for playing, it was tested the strength of relationship between playing and some generic classes of products. It was interesting to discover that more people admitted then that they are playing with products.

Table 7

Generic classes of products used for playing (revealed by a closed question)

Product	Number of respondents	Percentage [%]
Writing instruments	98	36.70
Cell phone	84	31.46
Jewels	63	23.60
Keys	7	2.62
Luggage	3	1.12
Varia	8	3.00
No playing	4	1.50

Table 8

Frequency of playing with products

Frequency	Number of respondents	Percentage [%]
Many times per day	120	45.63
Once a day	143	54.37
Once a week	0	0.00
Once a month	0	0.00
Do not know	0	0.00

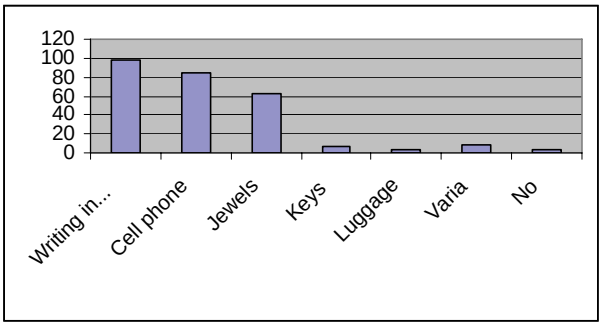

Fig. 2. Classes of products used for playing.

The top of playing for generic classes of products is presented in Table 7 and histogram (Fig. 2).

It must be noted that keys appeared even if they were not mentioned in the questionnaire. Compared with Tables 4 and 7 it does not indicate anything new. The order is the same and the percentages are just slightly different. All this indicates a consistency of the data collected by open questions and closed questions.

Another signal of consistency is the fact that 128 respondents (47.94%) indicated the same product when answered to open or closed questions.

When asked about the frequency of playing with products, the respondents related their answers with the day unit (Table 8).

The high frequency of playing with products shows that the play is part of the daily life. The fact that playing with products is not related with a larger interval of time indicates that playing is spontaneous.

4. ANALYSIS OF RESULTS

The experiment was carried-out in order to verify the hypotheses mentioned above. Accordingly, the results were analysed from three points of view.

4.1. Needs for psychological safety and adult playing

One of the hypotheses was that technological ritual fulfils the needs for psychological safety and playing.

The feeling of safety was stated only by one of the 267 respondents and it was mentioned in connection with the morning wake-up. It is related to the need of controlling time and events, but it appeared only once, which is quite insignificant. A possible explanation is the young age of the majority of respondents. The young are more brave and less concerned about safety.

On the other hand, "tranquillity" or "calming down" was mentioned quite often. In fact, this feeling was the most mentioned by respondents and received high scores, as can be seen in Tables 3 and 6. This feeling was associated to the recovery from a stressful state in order to be in shape to cope with the problems of life. It is true that the relationship with safety is a loose one, but it is strongly linked to the need of controlling the events.

The need for adult playing with products was confirmed in every regard. 30.55% of the alternative use of products was playing actions. 71.54% of respondents answered that they play with products, when asked using an open question. 98.5% of respondents indicated a product from a list of objects used for playing.

4.2. Characteristics of the product used for technological ritual

In introduction there were listed the product's characteristics for technological ritual.

The first characteristic was the reduced dimensions of the product in order to be perceived as personal. Reviewing the list of products mentioned in filled questionnaires, it could be observed that almost all the products are small- hand-sized. The exceptions are personal computer and luggage, but they had only few appearances. Also, jewels (including earrings and chain), writing instruments, cell phone, keys and cigarette lighter can be easily considered as personal. So the first characteristic was confirmed by experimental results.

The second characteristic is the "stand-out" feature. Jewels and cell phone help user to stand-out. Writing instruments and cigarette lighter can perform the same function if they are branded with a well-known name. But, no brands were mentioned in filled questionnaires. The keys cannot stand-out by themselves, only their keyring. But also, no keyring was noted in filled questionnaires. So, the second characteristic was not totally confirmed. It can be concluded that the stand-out feature can help user to choose the product for a technological ritual, but it is not compulsory.

The third characteristic is the "recognisable status" feature. This characteristic is close related to the second. The analysis from the above paragraph is true also for this feature. So, the conclusion is the same.

The forth characteristic is "fashion-influenced or eternal classic" feature. Jewels and cell phone are fashion-influenced and the writing instruments used by the respondents are classic types. So, this characteristic is confirmed by experimental data.

The fifth characteristic is the "sophisticated" feature. This is a complex issue, as sophisticated can be seen as intricate or as subtle simplicity. Cell phone is complex. Jewels can be very elaborated or neat elegant. Writing instruments have usually a simple ergonomic shape, but with subtle details. So, sophisticated can be considered as confirmed.

4.3. Confirmation of technological ritual concept

The experiment showed that there are certain ways to use products for adult playing. Yet, the relationship between specific procedures and the achievement of psychological safety was rather loose. Considering this, it can be concluded that the concept of technological ritual is partially confirmed, but further research is required.

5. FURTHER RESEARCH

A new questionnaire will be designed. It will focus on how a product can fulfil the need for psychological safety. Also, it will be aimed to discover the specific procedures performed to fulfil this need.

The new questionnaire will have the purpose to identify the whole sequence of gestures, not only the generic movements.

The new questionnaire should also determine the relationship between brand and technological ritual. Are there any brands that facilitate technological rituals?

6. CONCLUSION

In order to verify the validity of the technological ritual concept, a questionnaire was designed and run. The results were analysed from a statistical point of view.

The main conclusion was that technological ritual exists. It fulfils the need for adult playing with products that are not toys. It was not crystal clear if there are procedures associated to products that are used to fulfill the need for psychological safety.

The experiment validated some of the characteristics of a product that facilitate the technological ritual. These characteristics are: small, personal, sophisticated and fashion-influenced or eternal classic.

REFERENCES

[1] Dumitrescu, A. (2004). *Technological Ritual*, Proceedings of International Conference on Manufacturing Systems, Romanian Journal of Technical Sciences, Tome 49, pp. 651–654, Bucharest, November 2004, Editura Academiei Române, Bucharest.
[2] Baudrillard, J. (1996). *The System of Objects*, Verso Books, New York.
[3] Dormer, P. (1993). *Design Since 1945*, Thames and Hudson, London, New York.
[4] Sudjic, D. (1990). *Cult Objects*, Grafton Books, ASIN 0586084835, London.
[5] Moles, A. (1998). *El Kitsch*, Ediciones Paidos Iberica, Barcelona.

Author:

Ph.D. MSc. Eng., Andrei DUMITRESCU, Associate Professor, "Politehnica" University of Bucharest, Production Engineering Department, E-mail: dumitrescu.andrei@yahoo.co.uk