

# USING VIGNETTE TECHNIQUE TO CHECK THE PERSONALITY CONGRUENCE THEORY

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**Abstract** - A relatively new approach in enhancing the products' attractiveness to customers is assigning a certain personality by design to products. The effectiveness of this approach is based on the personality congruence theory which stipulates that people like/choose products with a personality similar to theirs. Some researchers found evidence in favour of this theory, but others expressed doubts. An experiment based on the vignette technique was carried out in order to check the personality congruence theory. Statistically, the results denied the theory, but a certain tendency in its favour was noted.

**Keywords** - product personality; personality congruence theory; vignette technique

## I. INTRODUCTION

A renowned expert in corporate and brand identity, David Aaker, used to ask his audiences if the competition is tough in their field. The answers were always "yes" with a notable exception: the general manager of Panama Channel [1].

Obtaining a cutting-edge advantage over competitors is crucial in today's crowded markets. Over the time, several approaches were employed in gaining the advantage. First, there were the product's superior technical and functional features. Decades later, the quantitative differences between these features offered by different manufacturers became insignificant for the common person. So, quality was employed as the new advantage. Soon, the quality systems were implemented in majority of companies and quality became a required feature of every product. Since the nineties, product aesthetics is used as a key advantage [2].

More, the concern for product aesthetics lead to the emergence of a new approach: establishment of emotional relationships between product and customer. The product visual elements (shape, colour, details, etc.) are employed by the customer in imagining the use of the product [3], in establishing its affordance, based on the much-discussed form-function determination. Thus, product design was the main channel through which customers build relationships with products [5] and [6].

The customers developed the idea that manufacturers

who invested much in product aesthetics were also investing in quality and, subsequently, a product that looked great was a quality product. This was the *What is beautiful is good* principle [6]. Researches confirmed the principle [3] and [7]. Moreover, visually attractive products were discovered to be easier to use [8]. But, Mugge [9] drew attention that this principle did not hold for every situation and she gave a very good example: the lemon squeezer "Juicy Salif" designed by Philippe Starck. This lemon squeezer had a remarkable design but was incapable to separate the seeds from juice.

A relatively new approach in establishing emotional relationships between customer and product is assigning a personality by design to products. Product personality is the set of human personality characteristics used to describe the specificity of a product [10]. Other researchers indicated similar definitions [9] and [11]. Moreover, Ruth Mugge [9] emphasised the difference between product personality and brand personality as presented by Jennifer Aaker [12].

Some people might consider product personality as a theoretical concept invented by researchers to have something to work on. But several common sense observations, experimental results, etc. indicate that product personality is a real and viable concept, useful for designers. Welch [13] underlined that a lot of nowadays automobiles had a mean-angry look in order to project a powerful message to the other traffic participants: "Get out of my way!". At the same, one of his interviewees said that "cars, like dogs, may resemble their owners and be seen as friendly companion". This statement may be considered a declaration in favour of congruence theory (see below), but it is really expected that every person that gets out of car with mean-angry-look posses this personality? Of course it is not the case.

Brunel and Kumar [5] performed an experimental research with multiple categories of goods to investigate the relationship between product personality - using Aaker's [12] scale - and design facets - as defined by Ellis [14]. The results indicated convergent evidence that the assessment of product aesthetics was correlated with the perception of product personality and, just in some

particular cases, the correlation was very strong.

A comprehensive research was carried out by Mugge, Govers, and Schoormans [15]. Their main purpose was to demonstrate that product personality was a meaningful concept for designers. They also investigated whether people evaluated various categories of consumer goods differently. A product personality scale was created as a tool. The scale consisted in single adjectives, not adjective pairs representing two opposites, because not every adjective used had a clear antonym. The research indicated that people were able to describe in detail the product personality using the provided scale. They also found that products with similar personality profile shared the same aesthetic features, allowing designers to create consistent product lines.

Mugge [9] approached a product personality type that could be very useful for designers: business-like personality, because this type is very likely to suggest a high performance quality and satisfaction in use. "A product with a business-like personality is believed to be competent, reliable, and dependable as well." The experimental research indicated that the presumption was true; the product aesthetics suggesting a business-like personality positively affected the perceived performance quality of the product. And the design feature that suggested business-like personality was angularity as opposed to curvature. In general, a business-like personality was more expected to be associated with unity, straight lines and grey or black colour.

Product aesthetics may indicate product personality and usually just a quick look is enough for people to assess the product's personality [5]. For example, Volkswagen Beetle is perceived as cheerful and cute, Volkswagen Touareg - dominant and tough [9]. Some common-sense clues are rounded shapes and warm colours for a friendly and caring personality [16].

Mugge, Govers and Schoormans [15] discovered that products sharing the same product personality possessed the same aesthetic features. This visual similarity proves to be true for different classes of products. On the other hand, products with the same function or the same use may have different personalities [17].

The existence of stable relationships between certain features of product aesthetics and certain product personalities may lead to setting forth a comprehensive product personality theory to guide designers in the conceptual process [16]. Some, but not all, of these relationships were identified. Consequently, a potential problem is that designers and customers may assign different personalities to the same product aesthetic feature [18]. Some researchers are optimistic and convinced that designers can detect and use the proper aesthetic features that would be correctly associated by customers with the intended personality [15].

Based on a presumption derived from the popular culture that men and women have quite different

personalities ("men are from Mars and women – from Venus"), another model of product personality was introduced with basically two instances: product-man and product-woman. McDonagh and Weightman [19] applied this model and the technique of product personality profiling to three classes of products and found out that the metaphorical model needed a certain degree of supervision when being applied, but the results could be quite inspiring.

At the same time, McDonagh and Weightman [19] employed in their survey the symbolism of living creatures. Participants to experiment were asked to associate products belonging to three classes with creatures and to describe the associated creature. Because of the variety of responses, the results could not be statistically analysed and this model could be just a tool for any designer to stimulate his/her imagination.

An issue related to the study of product personality is given by the fact that the majority of researches are considering the products as displayed items and not as objects used by people. The interaction between people and products is a significant aspect for research.

The researchers' interest in product personality is based on the assumption that people prefer products with a personality similar to theirs or, more accurately, products with a personality similar to their self-perceived personality. When people identify themselves with the product image, they will live a self-congruence at high level and this will positively affect the product assessment. The effect of self-congruence is given by people's need to display a consistent and positive image of themselves. In this regard, products act as agents to project the inner self to others [20]. This is the identity congruence theory.

A common-sense, not scientific, proof of personality congruence theory is people's desire to own a product that seems to be theirs. "As evidence, many consumers clearly are psychologically uncomfortable utilizing products and services which do not seem made for them... Therefore, if marketers wish to broaden their product's appeal across gender lines, they must reposition their product with respect to gender" [21].

Experimental researches using the vignette technique tested the personality congruence theory. Two 2-level personality dimensions were used in experiment. The results revealed a strong attachment of persons to the products sharing a similar personality [22].

In his first approach to the product personality issue, the well-known researcher Patrick Jordan [10] declared himself in favour of the personality congruence theory. Five years later, the researcher dismissed the personality congruence theory [23].

It is obviously that the topic of personality congruence is not settled. New researches should be carried out. Considering this, the author of the present paper decided to test the theory using different categories of products.



Fig. 1. Product 1 – Radio



Fig. 2. Product 2 – Radio



Fig. 3. Product 3 – Soapdish

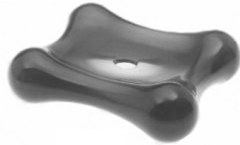


Fig. 4. Product 4 – Soapdish

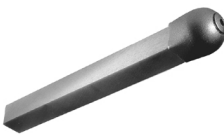


Fig. 5. Product 5 – Gas lighter



Fig. 6. Product 6 – Gas lighter

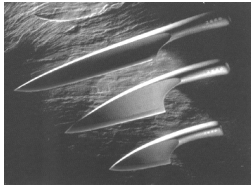


Fig. 7. Product 7 – Knives set



Fig. 8. Product 8 – Fruit bowl

## II. EXPERIMENTAL RESEARCH

Because the vignette technique was employed in similar experiments, it was decided to apply it in the current experiment. The vignette technique is based on scenarios. A scenario is a short story about a fictitious character who is involved in different situations and the participant at the experiment is asked to formulate an opinion on the character and his/her actions [24]. The vignette technique reduces the risk of participant's subjectivity biasing the results of the research, because the participant makes choices on behalf of the character and not on his/her own.

The Briggs-Myers Type Indicator was the personality model used in experiment, being the most widely spread. The Briggs-Myers Type Indicator has four personality dimensions described by the following pairs of features:

- 1) *extraversion (E) - introversion (I)*;
- 2) *sensing (S) - intuition (N)*;
- 3) *thinking (T) - feeling (F)*;
- 4) *judgment (J) - perception (P)*.

The products used in experiment were selected randomly. Even in such a case, the personality congruence should stand out. Finally, five pairs of coloured images of products with contrasting designs (two radio sets, two soap dishes, two gas lighters, two knife sets, and two fruit bowls) were selected.

These ten products were pre-tested by 67 master students at a large technical university (36 female and 31 male; age span: 21-25 years). The author of the present article briefly explained the Briggs-Myers model to participants and checked if they understood the model. For each pair of personality features, the participants could validate one of three options: the two features and the neutral option. Two products did not display any personality feature, so they were discarded. The remaining eight products used during the experiment are displayed in Figures 1 – 8. The results of the pre-test are presented in Table I.

TABLE I  
PRIMARY AND SECONDARY PERSONALITY FEATURE OF EACH PRODUCT

Product	Primary feature	Secondary feature
P1	Judgment 95.52%	Introversion 89.55%
P2	Extraversion 92.54%	Perception 74.63%
P3	Extraversion 77.61%	Perception 77.61%
P4	Introversion 86.57%	Judgment 74.63%
P5	Thinking 85.07%	Introversion 61.19%
P6	Extraversion 92.54%	Perception 80.60%
P7	Thinking 95.52%	Extraversion 59.70%
P8	Feeling 88.06%	Extraversion 80.60%

Four characters (Mircea, Mariana, Mihaela and Matei) were outlined as differently as possible. Every personality feature was translated into a typical behaviour or event, using the recommendations from scientific literature. So, four scenarios were finalised.

The four characters were pre-tested by 70 undergraduate students at a large university (38 female and 32 male; age span: 21-24 years). The Briggs-Myers model was explained to participants and they were asked questions to ensure that the model was clear to them. For each pair of personality features, the participants could validate one of three options: the two features and the neutral option. The results are presented in Table II.

TABLE II  
PERSONALITY PROFILE OF THE FOUR CHARACTERS

Character	Personality feature	%
Mircea	Introvert	54.3
	Sensing	80
	Thinking	98.6
	Judgment	100
Mariana	Extravert	72.9
	Intuition	78.6
	Feeling	65.7
	Perception	91.4
Mihaela	Extravert	78.6
	Sensing	50
	T/F	=
	Perception	57.1
Matei	Introvert	77.1
	Sensing	51.4
	Feeling	71.4
	Judgment	61.4

The actual experiment was carried out with 502 undergraduate students at a large technical university (257 female and 245 male; age span: 21-24 years). The students did not receive money or extra credits for their involvement in experiment. The Briggs-Myers model was **not** explained and the true nature of experiment was not revealed to participants.

The participants were asked to read the scenarios carefully and to imagine the characters as real life beings. Afterwards, they were invited to evaluate how much each character liked each product, using the following scale: 0 – the character neither likes nor has any interest in the product; 1 – the character likes the product to a moderate extent; 2 – the character likes the product very much (is “passionate about the product”). The Cronbach’s alpha coefficient of experiment was 0.71.

The results are presented in Table III. The values that confirm the theory are in bold, the values that invalidate the theory - italic and maximum values - bold-italic.

TABLE III  
MEANS OF AESTHETIC PREFERENCE

Product	Mean / product	Mircea T + J	Mariana P+N+E	Mihaela E + P	Matei I + F
P1 (J+I)	0.73	0.62	0.45	0.53	<b>1.33</b>
P2 (E+P)	0.96	1.14	<i>1.02</i>	<b>1.24</b>	0.44
P3 (E+P)	0.83	0.55	<b>1.16</b>	<b>1.26</b>	0.35
P4 (I+J)	0.92	0.93	1.09	<b>1.16</b>	<i>0.48</i>
P5 (T+I)	0.83	<b>1.20</b>	0.57	0.72	0.84
P6 (E+P)	0.86	0.52	<b>1.34</b>	<b>1.29</b>	0.29
P7 (T+E)	0.90	<b>1.48</b>	0.58	0.73	0.82
P8 (F+E)	1.00	0.74	<b>1.31</b>	<b>1.53</b>	0.45

The personality congruence is confirmed by 10 values and invalidated by 3. It is only Mircea and Mihaela that are attracted by products that fit their personality.

A null hypothesis was formulated: “Each character likes only some products”. After applying the ANOVA – single way for each character, the following values were obtained: Mircea,  $F(7,4008) = 125.66$ ; Mariana,  $F(7,4008) = 131.97$ ; Mihaela,  $F(7,4008) = 127.98$ ; Matei,  $F(7,4008) = 134.88$ . All values are superior to the critical value  $F_{cr} = 2.639$ , which means the null hypothesis is rejected for all characters.

### III. CONCLUSION

The experiment tested the personality congruence theory by the vignette method. The participants at experiment learned about four fictitious characters with a determined personality and they evaluated how much each character liked a series of existing products with various personalities.

The ANOVA single-way technique invalidated the theory, but the empirical observation of results indicated a low level of congruence between product’s personality and character’s personality.

### REFERENCES

[1] D. Aaker, *Building Strong Brands*, New York: Free Press, 1996.  
[2] B. Schmitt and A. Simonson, *Marketing Aesthetics*, New York: Free Press, 1997.

[3] Ch. Page, and P. Herr, “An investigation of the processes by which product design and brand strength interact to determine initial affect and quality judgments”, *Journal of Consumer Psychology*, Vol. 12, No. 2, pp. 133-147, 2002.  
[4] Z. Lewalski, *Product Aesthetics: An Interpretation for Designers*, Carson City: Design and Development Engineering Press, 1988.  
[5] F. Brunel and R. Kumar, “Design and the big five: Linking visual product aesthetics to product personality”, In G. Fitzsimons and V. Morwitz (Eds.), *Advances in consumer research*, Association for Consumer Research, Orlando, Vol. 34, 2007, pp. 238-239.  
[6] K. Dion, E. Berscheid and E. Walster, “What is beautiful is good”, *Journal of Personality and Social Psychology*, Vol. 24, No. 3, pp. 285-290, 1972.  
[7] R. Veryzer and W. Hutchinson, “The influence of unity and prototypicality on aesthetic responses to new product designs”, *Journal of Consumer Research*, Vol. 24, No. 4, pp. 374-394, 1998.  
[8] N. Tractinsky, S. Katz, and D. Ikar, “What is beautiful is usable”, *Interacting with computers*, Vol. 13, No. 2, pp. 127-145, 2000.  
[9] R. Mugge, “The Effect of a Business-like Personality on the Perceived Performance Quality of Products”, *International Journal of Design*, Vol. 5, No. 3, pp. 67-76, 2011.  
[10] P. Jordan, “Product as Personalities”, In Robertson, S. (Ed.), *Contemporary Ergonomics*, London: Taylor and Francis, 1997.  
[11] P. Govers and J. Schoormans, “Product personality and its influence on consumer preference”, *Journal of Consumer Marketing*, Vol. 22, No. 4, pp. 189-197, 2005.  
[12] J. Aaker, “Dimensions of Brand Personality”, *Journal of Marketing Research*, Vol. 34, No. 3, 1997.  
[13] J. Welch, Why Cars Got Angry, *The Wall Street Journal*, March 10, 2006.  
[14] S. R. Ellis, *A psychometric investigation of a scale for the evaluation of the aesthetic element in consumer durable goods*, Unpublished dissertation. Tucson: University of Arizona, 1993.  
[15] R. Mugge, P. Govers, and J. Schoormans, “The development and testing of a product personality scale”, *Design Studies*, Vol. 30, No. 3, pp. 287-302, 2009.  
[16] L. E. Janlert, and E. Stolterman, “The character of things”, *Design Studies*, Vol. 18, No. 3, pp. 297-314, 1997.  
[17] I. van Kesteren, P. J. Stappers, P. Kandachar, “Representing Product Personality in Relation to Materials in the Design Problem”, *Proceedings of the international conference of the Nordic Design Research society*, Copenhagen, 2005.  
[18] S. Hsu, M. Chuang and C. Chang, “A semantic differential study of designers’ and users’ product form perception”, *International Journal of Industrial Ergonomics*, Vol. 25, No. 4, pp. 375-391, 2000.  
[19] D. McDonagh and D. Weightman, “If Kettles Are from Venus and Televisions from Mars, Where Are Cars from?” In *Proceedings of the 5th European Academy of Design Conference*, Barcelona, pp. 151-161, 2003.  
[20] J. Sirgy, “Self-concept in consumer behavior: A critical review”, *Journal of Consumer Behavior*, 9 (December): pp. 287-300, 1982.  
[21] L. Milner, and D. Fodness, “Product Gender Perceptions: the Case of China”, *International Marketing Review*, Vol. 13, No. 4, pp. 40-51, 1996.  
[22] P. Govers and R. Mugge, “The Effect of Product-Personality Congruence on Product Attachment”, In *Proceedings of the Fourth International Conference on Design and Emotion*, Ankara: Ed. Aren Kurtgözü, 2004.  
[23] P. Jordan, “The Personalities of Products”, In Green, W., and Jordan, P. (Eds.), *Pleasure with Products. Beyond Usability*, London: Taylor and Francis, 2002.  
[24] J. Finch, The Vignette Technique, *Sociology*, Vol. 21, No. 1, pp. 105-114, 1987.