

## TESTING THE PERSONALITY CONGRUENCE THEORY BY DIRECT EVALUATION

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*The personality congruence theory states that people like products that have a personality similar to theirs. Findings of some researchers support the theory, but other researchers expressed doubts. An experiment based on direct product evaluation was carried out to test the validity of the personality congruence theory. In this experiment, the personality of participants at experiment was determined. Subsequently, the participants indicated how much they liked a series of products with different personalities. The correlation between participants' personalities and products' personalities was analysed by the degree of liking. The experiment invalidated categorically the congruence theory.*

**Keywords:** product personality; personality congruence theory

### 1. Introduction

Experimental researches indicated and textbooks disseminated the importance of industrial design (product aesthetics as some authors like to write) in gaining advantages over the competitors in crowded markets [1, 2, 3]. A remarkable design pushes the product forward in the eyes of the customer and helps him/her to decide. In this way, the industrial design becomes a key strategic asset for companies [4].

Industrial design can be used to build significances for products and surround them with positive connotations that strongly manipulate the customer in terms of perception, understanding and assessment [5].

In the moment of purchase, the customer may have the permission to test the product, but sometimes this is impossible, like in the case of washing machines. In other cases, the testing time is limited, and the customer cannot get a reliable idea about the product performances. Because of these reasons, the customer is seeking for clues to help him/her in the purchase decision. Such clues can be: brand, price positioning, vendor opinion, and industrial design [6].

The generic product is a lifeless object, with limited functions and a constant aspect as designed by its creator. The product is therefore an entity without personality. However, because of the emotional connection between a person and the product he/she possesses, uses or contemplates, people allot the

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product a personality similar to the human personality. "The most wanted product nowadays is neither raw material nor machinery, but personality." [7]

Battarbee and Mattelmäki studied the emotional relationships between man and product analysing 113 significant stories. They concluded that emotional products could be classified in three types: meaningful tool, meaningful association and living object. What makes their article interesting is the living object. The living object is the product that has got personality and soul to its owner. It has a great story related to its creation, acquisition or survival [8].

A possible way to build an emotional relationship with an object is to anthropomorphise it. There are several reasons why people anthropomorphise objects. A first reason is the need for emotional comfort. People develop relationships with their peers, but can acquire more relationships using anthropomorphised products. A second reason is a cognitive one. People cannot fully understand the surrounding world and ascribing human features to world's elements allows people to think that they can better understand and control the outcomes of their activities [9]. A third reason is the cognitive and perceptual strategy used by humans to lower the level of perceived risk in a world with elements similar to them [10].

People themselves are likely to anthropomorphise all objects around them; the tendency is amplified for objects that possess certain characteristics. For example, a moving object or an object that contains moving parts is easier to anthropomorphise, because it seems alive [11]. Yet, the velocity of the movement is important. Objects or parts of objects that move too quickly are associated rather with insects than with humans, and objects or parts of objects that move too slowly are not perceived as human [12].

A very specific case of anthropomorphism is to give human shape to an object. This is the anthropomorphic form. DiSalvo and Gemperle went even further and declared that the anthropomorphic forms are "not only those things that look human-like, but also those things that behave human-like – regardless of how they may look" [13].

The same authors performed a short scrutiny of products with anthropomorphic forms and identified the possible reasons for this design approach: "1) Keep things the same, 2) Explain the unknown, 3) Reflect product attributes, and 4) Reflect human values" [13].

The use of anthropomorphic forms in design triggered a debate. Brenda Laurel campaigned in favour of this approach, arguing that anthropomorphic forms enrich products with meaning and new ways of interaction. Ben Schneiderman denied the positive aspects and underlined the peril of creating false expectations and dangerous relationships [14].

The main reason for giving an anthropomorphic form to products is to enhance their attractiveness and make them meaningful and more compelling to

customers. However, the process of conferring an anthropomorphic form should be carefully performed. Unfortunately, too much often the makers of cheap products use this approach just to produce kitsch items. As a proof, it is enough to search on a consumer-to-consumer site to discover hundreds of kitsch products with anthropomorphic form.

In order to avoid such a peril, designers apply a more subtle strategy. The human body (or parts of it) is not exactly copied in product shape, but the product shape has a certain resemblance to the human body. Employing only some human features is a successful approach to accomplish emotional designs [15].

Using anthropomorphic features incorporated in product design, designers activate deeply rooted human feelings acknowledged by psychologists. In this manner, designers use psychology to initiate affective responses and persuade customers [16].

The most notable current method is the use of baby-like anthropomorphic forms. One author [17] called it the cult of cute. Exponents of this method are famous designers like Stefano Giovannoni and Alessandro Mendini. Their product shapes trigger customer's parental and social instincts.

Scientists like Konrad Lorenz discovered that babies determined strong positive reactions in humans [18, 19]. Babies elicit spontaneous reactions like smiling and soft speaking. This fact is true not only for human babies, but also for babies of all species that share similar facial features (large eyes, high forehead, small nose and other rounded features). The explanation for these reactions is the need for caretaking of the species' next generation.

Miesler, Leder, & Herrmann [15] studied the affective responses to cute product designs and discovered that people reacted positively, rapidly and consistently to baby-like shapes.

Jordan [20] defined product personality as the set of human personality characteristics used to describe the specificity of a product. Similar definitions were given by other authors [21, 22]. Mugge [22] also pointed out that product personality was different from brand personality as described by Aaker [23].

The concept of "product personality" overlaps with the concept of "character". "A character is a coherent set of characteristics and attributes that apply to appearance and behaviour alike, cutting across different functions, situations and value systems - esthetical, technical, ethical - providing support for anticipation, interpretation and interaction" [24]. This character offers certain advantages. Just a glance at the product, not a prolonged watch on its functioning and the observer can assign a particular character. It is easier to characterise a complex product like the automobile than to have an in-depth understanding of its structure and inner functioning. Being a unity of characteristics, the character may be partitioned into simple characteristics that are interrelated. Thus, knowing part of these simple characteristics allows the observer to deduce the rest.

Product personality is a real-life concept, but there is a risk to overestimate it. Dumitrescu [25] performed an experiment to test this concept using various classes of products. The model used in the experiment was based on pairs of opposing attributes. The pairs of attributes were preferred because the experiment participants could handle them more easily. All pairs consisted in definite antonyms. The experiment was focused not on assessing products' personality, but on evaluating the relevance of each pair of attributes in relation to each and every product. The results revealed that some pairs of attributes (stable-unstable, brilliant-dim, complex-simple, etc.) were more significant than others. The numerical data obtained during the experiment indicated that product personality was not a powerful concept. But overall, the experiment validated the concept of product personality.

Jordan [20] proposed a model based on Briggs-Myers Type Indicator - a classic model taken from psychology. This model uses four dimensions of personality: orientation of energy (extraversion/introversion), understanding reality (sensing/intuition), way of thinking (thinking/feeling), and way of action (judging/perceiving). This model "has been criticised by designers on the grounds that the model of personality used - Briggs-Myers - is not something that is easy for the non-psychologist to understand without explanation. In particular, the terminology does not reflect that which a layperson would use when describing personality" [26].

Because of criticism, Jordan introduces a new model based on 17 dimensions [26]. The new model is comprehensive and easy to use. However, some dimensions and attributes involved some ambiguities and Dumitrescu [27] improved it (Table 1).

**Table 1**  
**Personality model with 20 dimensions [25, 26]**

Dimension	Attributes	
Self-awareness	Vain	Modest
Brilliance	Brilliant	Dim
Complexity	Complex	Simple
Energy	Energetic	Passive
Sensitivity	Sensitive	Insensitive
Kindness	Violent	Gentle
Flexibility	Flexible	Inflexible
Politeness	Polite	Impertinent
Maturity	Mature	Childish
Openness	Open	Closed
Generosity	Generous	Selfish
Honesty	Honest	Dishonest
Seriousness	Serious	Light-hearted
Stability	Stable	Unstable
Tolerance	Authoritarian	Liberal
Morality	Principled	Opportunistic

Dimension	Attributes	
Attitude towards reality	Naive	Cynical
Attitude towards rules	Conformist	Rebel
Attitude towards results	Pessimistic	Optimistic
Closeness to subject	Warm	Aloof

This model was tested on several products with bold design and humble design, as well. It was discovered that products possessing a bold design had a strong personality and products with humble design had a weak personality [27].

The practical value of product personality concepts resides in 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. This is the personality congruence theory.

Govers and Mugge [28] carried out an experiment using a series of mainstream toasters. They discovered that the personality congruence theory was confirmed by the experimental results.

Back in 1997, Jordan declared himself in favour of the idea of personality congruence. After five years, an experiment performed by Jordan [26] did not find evidence to confirm the personality congruence.

Considering all the above, the author of the present article felt that the theory of product congruence needed an objective test and not that sort of test that was seeking only confirmation. Not all the theories are inevitably true.

## 2. Design of experiment

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

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

Because the armchair is one of the products that are most often addressed by industrial designers and there is a great formal variety of them, it was decided to use the images of eight armchairs in order to test the personality congruence theory by direct evaluation. Out of dozens of coloured images representing armchairs created by famous designers, the author of the present article and his colleagues selected eight, each of them possessing one fully developed personality feature of the considered model. The order in which the armchairs were presented in the experiment was random, without taking into account the order of pairs of Briggs-Myers model. The armchairs are presented in Figures 1 – 8.

### 3. Experimental results

The eight armchairs were pre-tested by 27 master students at a large technical university (17 female and 10 male; age span: 23-26 years). The author of the present article briefly explained the Briggs-Myers model to participants and checked if they understood the model. The participants assessed each armchair considering the personality model, using for each pair of features a 4-item Likert scale (to avoid the selection of the neutral option). The Cronbach's alpha coefficient was 0.77. To measure the intensity of personality feature, it was considered the value of  $X$ . (2.5 is the mean of [1,4] interval.)

$$X = |2.5 - M| \quad (1)$$

where  $M$  is the average.

The results are displayed in Table 2. The pre-test validated the initial selection, but also indicated some well-developed secondary features for five products.

Table 2

Primary and secondary personality feature of each armchair

Type	P1		P2		P3		P4		P5		P6		P7		P8	
	F	I	E	S	I	N	E	J	S	J	T	S	P			
X	<b>1.2</b>	0.8	<b>1.28</b>	1.17	<b>1.09</b>	<b>1.13</b>	0.94	<b>1.13</b>	<b>1.24</b>	0.94	<b>1.35</b>	0.69	<b>1.13</b>			

The main phase of the experiment was carried out using 50 undergraduate students at a large technical university (33 female and 17 male; age span: 21-24 years). The Briggs-Myers model was **not** explained to participants and the real purpose of the experiment was not disclosed. The participants were told that the experiment addressed the relationship between human personality and aesthetic preferences.

At the beginning, the participants answered a series of eight questions meant to determine the personality features according to Briggs-Myers model. The questions allowed the identification of extraverts, introverts, those "energy" balanced, thinking type, feeling type, those "judging" balanced, etc.



Fig. 1. P1 - "Feeling" Armchair.



Fig. 2. P2 - "Extravertite" Armchair.



Fig. 3. P3 - "Introvertite" Armchair.



Fig. 4. P4 - "Intuition" Armchair.



Fig. 5. P5 - "Judgment" Armchair.



Fig. 6. P6 - "Sensing" Armchair.



Fig. 7. P7 - "Thinking" Armchair.



Fig. 8. P8 - "Perception" Armchair.

After having processed the data, no intuition and perception types were found among the participants. For privacy reasons, no participant was fully assessed according to Briggs-Myers model. Afterwards, the same participants indicated how much they liked each armchair considering only the product's aesthetics. A 7-item Likert scale was used, where 7 stands for the maximum positive assessment. The Cronbach's alpha coefficient was 0.62, so the results should be considered with care. The results are presented in Table 3.

There are recorded on table's rows the means of marks granted to each product by all participants in turn, then by the extraverts, the introverts, etc. The values that confirm the theory are in bold, the values that invalidate the theory are in italic and maximum values are in bold-italic.

Table 3

Means of aesthetic preference								
	P1	P2	P3	P4	P5	P6	P7	P8
Mean given by	F	E	I	N	J	S	T	P
	I	S		E		J	S	
Overall	4.48	4.44	4.25	3.88	4.31	4.46	5.19	5.08
Extraverts (E)	4.24	4.65	3.71	3.65	4.35	4.06	5.06	4.24
Introverts (I)	5.06	4.00	4.50	3.39	4.17	4.67	5.22	5.56
Sensing (S)	4.59	4.38	3.90	3.69	4.34	4.07	5.07	5.10
Thinking (T)	5.50	3.75	5.50	3.25	6.50	4.50	6.25	3.50
Feeling (F)	4.26	4.77	3.97	3.66	4.06	4.29	4.83	4.97
Judgement (J)	4.42	4.35	4.19	4.27	4.27	4.04	4.85	5.00

In order to confirm the personality congruence theory, all the maximum means should indicate the correspondence between similar personality features displayed by both men and products (at the level of primary feature). Analysing the data presented in Table 3, one can observe that it is only one out of the six products having a human correspondent that confirms the theory. The theory is not confirmed considering the secondary features either. These results categorically invalidate the personality congruence theory despite the relativity given by a Cronbach's alpha coefficient lower than 0.7.

It was decided to check the data using another statistical technique. It was observed that the data obtained during the aesthetic assessment could be analysed using ANOVA – single way. In this case, the null hypothesis is: "Each participant likes more a certain product". The varying parameter is the product personality. After applying the technique, it was obtained  $F(7,392) = 2.46 > F_{cr} = 2.03$  ( $p < 0.017$ ), so the null hypothesis was rejected. The personality congruence theory was therefore invalidated once more.

#### 4. Discussion

The personality congruence theory is a theory of practical value. If true, designers could create products with a well-defined personality that would make these products more appealing to certain customers.

The Briggs-Myers Type Indicator was used to test this theory. Even Jordan [26] underlined he had received complaints regarding the difficulty in model's use, it was decided to use this model because it is well-known, at least at extravertite-introvertite opposition level.

Worldwide, the current researches are usually based on the action of selection or on the "like" relationship. It would be interesting to test the congruence theory on real actions of purchasing.

Anyway, from the point of view of today's marketing, the personality congruence theory has a limited use, because personality is not one of the usual demographic data employed in market segmentation.

## 5. Conclusions

The research presented in this article was aimed to test the theory of personality congruence. The personality congruence theory stated that people like products possessing a personality similar to theirs.

The experiment tested the theory using the direct evaluation. The participants at experiment were classified according to their personality features and they indicated how much they liked a series of armchairs with an outstanding design and a strong personality. This experiment invalidated the personality congruence theory.

Finally, the personality congruence theory does not act at a high level so that a designer or manufacturer could entirely rely on it, but the idea of congruence may be very efficient as a source of inspiration for designers.

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