

COLOUR AND PERSONALITY IN THE FURNISHING OF APARTMENTS

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ABSTRACT

The aim of the present study was to ascertain the personality correlates of the potential use of colours in unfurnished and undecorated apartments. The subjects had to choose the most appropriate colour(s) for the floor, walls, ceiling, and furniture of seven places (anteroom/corridor, wardrobe, sitting-room, dining-room, kitchen, bath-room with water-closet, bedroom, small room/study, and nursery). After that Cattell's 16 PF Questionnaire was answered by the subjects.

Correlations were calculated between personality factors and colour choices for the planes and pieces of furniture appearing in nine rooms of an imaginary apartment. The results were interpreted in accordance with the preliminary hypotheses concerning the contextual and personality determinants of the use of different colours.

Colour in every-day life and its symbolic implications

Colour as a natural phenomenon does not imply any meanings that could lead to the conceptual world. Its meaning is based on comparison (allusive meaning relation) or convention (conventional meaning relation) (Rotar, 1972). Still, colour is much more than a set of data, enabled by the physical world. It determines things and phenomena more precisely than their form (Kovačev, 1990, 1991), for it gives them a particular emotional significance and provides the subject with experiential fullness (Kovačev, 1993, 1994a; Kovačev & Musek, 1993). Therefore it has a very important role in man's spiritual and social life.

The vital importance of colours in human life causes their symbolism to be one of the most important research fields of contemporary symbology. It has been studied by many researchers (Chevalier in Gheerbrant, 1986; Cooper, 1978; Gibson in Gibson, 1966; Kovačev, 1990; 1991; 1992; 1994a; 1994b; Lurker, 1991; Musek, 1990; Trstenjak, 1987) who tried to identify its social, cultural, and personality determinants. Still, the colour meaning structure is not easy to determine. Nay in the same culture colours have a number of different or contradictory meanings, while their intercultural

differences are much clearer. Still, they have some common, universal connotations. These are often determined by the psychophysical effects of colours on human beings.

Physiological and psychological effects of colours

There have been many studies concerning the psychophysiological effects of colours on human organism (Chandu, 1991; Frieling, 1988; Heller, 1989; Kovačev, 1992; Luescher and Scott, 1988; Trstenjak, 1987). Their purpose was most frequently the application of colours in medical treatment, the choice of colours in creating a friendly atmosphere, the choice of appropriate colours for clothes and decoration, and the functionalization of colours at work.

From the physiological point of view red is a penetrating and hot colour. Its main effects on human organism are: rising of muscular tone, acceleration of heart beat, heightening of blood pressure, etc. (Trstenjak, 1987). These determine its psychological meanings, as well. Therefore red is usually regarded as the colour of passion, courage, nearness, and psychic metamorphosis (Kovačev, 1994a, 1994b). In the tradition of the majority of cultures red was considered to be the colour of fire, frivolousness, life, health, activity, love, egocentrism and extroversion (Cooper, 1986; Kovačev, 1992).

The physiological effects of blue are calming and by this contrary to the effects of red. Still they are not always very clear. According to the opinion of some authors (Hassey, Podolsky, etc.) it lowers blood pressure and muscular tone, calms the pulse, breathing rhythm, and nervousness. Blue light enables a good concentration, but can also cause some kind of dreaminess which does not cause any unpleasantness or excitement (Kovačev, 1992). The main psychological correlates of these physiological states are calmness, peace, and introspection.

Blue often symbolizes truth, faith, purity, nobility, wisdom and the transition to the remote areas of the empty, metaphysical space. Still, its freshness often passes over to coolness and its peaceful dignity to conservatism.

Yellow is a very stimulating colour. It enables a good concentration and facilitates mental activity. As the colour of the sun it stimulates organic activity and can successfully be used in the therapeutic treatment of psychoneuroses. It symbolizes intuition, reason, and will. At the same time it represents activity and extraversion, although not to such extent as red and orange. The valence of yellow depends on its tone and light. Its lighter tones and golden-yellow usually imply positive connotations, while its darker and duller shades imply extremely negative ones.

The blending of yellow and blue results in the formation of green, whose tranquillizing effects are similar to those of blue. Still green is not so cold and unapproachable. It lowers the blood pressure and is a very useful therapeutic means. It can namely be used in the treatment of mental illnesses, nervousness, tensions, hysteria, neuralgia, megrim, sleeplessness, etc. (Trstenjak, 1987).

Green implies passivity, peace and self-satisfaction. Because of its calming effects on the organism it is also a relatively boring and non-stimulating colour. As the colour of

nature it symbolizes vegetation, freshness, earthliness, attractiveness, sensibility, emotionality and reproduction.

The very opposite of green is orange, an extremely extrovert colour. It is considered to be the colour of fire, joy, activity, luxury, and lust, for it belongs to the psychophysical stimulators. In spite of its favourable effects on the organism it has never been regarded as a valuable colour. Most often it is denoted as intrusive, cheap, and artificial (Kovačev, 1992).

Violet is a mixture of red and blue. Therefore it integrates the tonic effect of blue and the stimulating effect of red (Trstenjak, 1987). Because of the contrary meanings implied in its components it can indicate either inner restlessness, caused by the contradictions, contained in it, or a harmonious synthesis of the polarities. It is often connected with intelligence, knowledge, sublimity, moderation and temperance, but also with sorrow, despair, and longing.

Brown is a synthesis of all chromatic colours. It is the most frequent and realistic colour, for it can easily be found in nature. Its role in the traditional symbolism is not very important and it has few poor symbolic implications. Most often it is associated with mud, dirt, and excrements which represent the negative pole of corporeity. It is also the colour of two deadly sins: greediness, and idleness. In spite of that it can evoke positive feelings and associations. As the colour of rustic furniture it creates the impression of domesticity, friendliness and warmth. It is also the colour of earth and therefore it symbolizes pleasantness, safety, maternity, security, and return.

The achromatic colours black and white coincide with the darkness and light and symbolize the eternal struggle between opposite, positive and negative forces. Light is the universal symbol of good and positive phenomena, while dark symbolizes their negative pole. The dichotomies of life and death, truth and lie, hope and despair, good and evil, consciousness and the unconscious, maintain the dialectics, involved in nature, which determines the existence of all living beings, and is equilibrated in gray. The latter namely symbolizes the motionless and indifferent neutrality, indecision and lack of energy, life, and joy.

Applied research of colours

A lot of attention has been paid to the expressive and functional value of colours. Their expressive value was studied for psychodiagnostic purposes, while its functional value was studied to stimulate the efficiency of workers in factories, bureaus, etc.

Trstenjak (1987) states that the children, who often use warm colours, are much more sensitive and friendly to the others. They like to cooperate and their feelings depend on the feelings of their social surroundings. Children, that prefer to use cold colours, i. e. green, blue, or brown and black, are not so very expressive. They show a tendency to control their behaviour, are repressive, and do not manifest much spontaneity. Sometimes they are even aggressive and do not feel satisfied in their surroundings.

The use of colours in the intimate, domestic life has been paid a lot of attention in popular articles in magazines and in journals of decorative arts. Still, these problem

has not been studied very often by psychologists. Even if it was studied by them, there were no attempts to find any possible relation between the use of colours in houses or appartments and personality. Colour choice was usually presented as the result of the prevalent taste of a certain society, culture, or period of time.

There is no doubt that the influence of the factors mentioned above on colour preferences and their use in furnishing appartments is very important. Still, one would expect an important relation between the tendency to chose certain colours and personality characteristics.

Personality and its relation to colour preferences

According to Cattell (1950) personality is that, what enables the anticipation of a certain person's behaviour in a certain situation. For this reason a profound knowledge of the subject's personality might enable the prediction of his colour preferences and choices in furnishing the appartment.

The present research was focused on the relation between personality and the use of colours in an imaginary appartment consisting of the elements listed on a sheet of paper. The aim of the study was to ascertain the significant correlations between Cattell's primary personality factors (i. e. Affectothymia (A), General intelligence (B), Ego-strength (C), Dominance (E), Surgency (F), Superego-strength (G), Parmia (H), Premsia (I), Protension (L), Autia (M), Shrewdness (N), Guilt proneness (O), Radicalism (Q1), Self-sufficiency (Q2), Self-control (Q3), and Ergic tension (Q4)) and the use of 10 colours in furnishing the appartment.

METHOD

Subjects

The subjects were 57 students of psychology at the University of Ljubljana. They volunteered to participate in the study as a means of partially fulfilling the obligations of their seminar. No information about the study was provided prior to the questionnaires session.

Procedure

Two instruments were applied to the subjects:

1. The Appartment colorization test, which was constructed for this experiment
2. Cattell's 16 PF Questionnaire.

Ad 1) The apartment colorization test consisted of a list of 9 different rooms (each of them consisting of several elements) of an apartment which had to be furnished. There were 89 elements that had to be coloured by the subjects. The subjects were free to choose one or more colour for every element of the imaginary apartment and to write it/them down beside the name of each element.

Anteroom/corridor (I) consisted of ten elements which had to be coloured. These were: floor (E1), walls (E2), ceiling (E3) coat-racks (E4), cupboard (E5), table (E6), chairs (E7), telephone (E8), intercomsystem (E9), lights (E10).

Wardrobe (II) consisted of eight elements: floor (E11), walls (E12), ceiling (E13), cupboard (E14), dress-hangers (E15), light (E16), curtain(s) (E17), carpet (E18).

Sitting-room (III) consisted of eleven elements: floor (E19), walls (E20), ceiling (E21), couch (E22), armchairs (E23), table (E24), cupboard (E25), chandelier (E26), curtains (E27), carpet (E28), telephone (E29).

Dining-room (IV) consisted of nine elements: floor (E30), walls (E31), ceiling (E32), table (E33), chairs (E34), cupboard (E35), light (E36), curtain(s) (E37), carpet (E38).

Kitchen (V) consisted of eight elements: floor (E39), walls (E40), ceiling (E41), kitchen unit (E42), cooker (E43), refrigerator (E44), light (E45), curtain(s) (E46).

Bathroom with water-closet (VI) consisted of twelve elements: floor (E47), walls (E48), ceiling (E49), bath/shower (E50), wash-basin (E51), bidet (E52), toilet-seat (E53), light (E54), armature elements: pipes, etc. (E55), toilet equipment: towel-rails, etc. (E56), bath-room furniture (cupboard, dirty linen basket) (E57), carpet (E58).

Bedroom (VII) consisted of ten elements: floor (E59), walls (E60), ceiling (E61), bed-spread (E62), wardrobe (E63), dressing table (E64), chairs (E65), chandelier (E66), curtain(s) (E67), carpet (E68).

Small room/study (VIII) consisted of eleven elements: floor (E69), walls (E70), ceiling (E71), table (E72), chair (E73), cupboard (E74), book-shelves (E75), telephone (E76), chandelier (E77), curtain(s) (E78), carpet (E79).

Nursery (IX) consisted of ten elements: floor (E80), walls (E81), ceiling (E82), bed (E83), wardrobe (E84), table (E85), chair (E86), light (E87), curtain(s) (E88), carpet (E89).

The subjects had to write down one or more colours for every element of the apartment. If they supposed that any of the listed elements should not appear in the apartment, they were allowed to let it out (i. e. not to colour it). If the subjects had written more than one colour beside a certain apartment element, all colours were ascribed to equal importance. The aim of the study was namely to find out the appearance of a certain colour on a certain element and to determine its personality correlates, and not to determine the relative quantity and importance of every single colour that appeared in a colour combination.

Ad 2) *Cattell's 16 PF Questionnaire* contained 16 source dimensions of personality (Cattell, 1957; Fulgosi, 1985).

1. The positive pole of the dimension A (Affectothymia), which coincided with a high score on it, was characterized by warmth, sociability, good nature, cooperativeness, attentiveness, politeness, and reliability.
2. High general intelligence (B) was characterized by cleverness and mental ability.
3. High ego-strength (C) implied emotional stability, maturity, calmness, sincerity, and realism in relation to life.
4. Dominance (E) was characterized by superiority, independance, seriousness, unconventionality, and resistance.
5. Surgency (F) was characterized by enthusiasm, talkativeness, high spirits, sincerity, openness, and expressiveness.
6. Superego-strength (G) was characterized by self-consciousness, perseverance, responsibility, seriousness, and attentiveness.
7. Parmia (H) implied adventurousness, activity, courage, and incautiousness.
8. Premsia (I) implied sensitivity, femininity, pretentiousness, need for help, and intuition.
9. Protension (L) implied suspiciousness, jealousy, tyranny, and irritability.
10. Autia (M) implied absent-mindedness, unconventionality, interest for art, imaginativeness, creativity, and immaturity in practical decisions.
11. Shrewdness (N) was characterized by refinement, politeness, exactness, emotional discipline, aesthetic selectivity, regardfulness, and ambitiousness.
12. Guilt proneness (O) was characterized by shyness, uncertainty, worriedness, depressiveness, irritability, strong feeling of duty, pretentiousness, inflexibility, pedantry, ill temper, and phobic symptoms.
13. Radicalism (Q1) was characterized by a tendency to experiment, non-traditionalism, and interest for the fundamental social problems.
14. Self-sufficiency (Q2) was characterized by pride, engagement in creative work, and absence of troubles in making decisions.
15. High self-control (Q3) was characterized by a strong will, perseverance, reliability, and self-consciousness.
16. High ergic tension (Q4) was characterized by tension, irritability, excitability, sensibility to critic, feeling that the achieved results are smaller than they could be, and frequent mood changes.

The negative pole of these dimension was characterized by the oposite attributes and coincided with the subjects' low scores.

Correlations were calculated between 16 primary factors (Cattell's 16 PF) and the use of 10 main colours to 89 different elements of an appartment. Different shades were not considered separately but were categorized into one of the main colour categories (red, blue, yellow, green, violet, orange, brown, black, white, gray).

RESULTS AND DISCUSSION

The most frequent colours, chosen by the subjects for their imaginary apartments, were white and brown. This result did not surprise us, because it coincided with the frequency of the appearance of both colours in real apartments, and their desirability. Still, it was contrary to all experiments of colour preferences which were concentrated on isolated colours, torn out of their context in the objective world. Isolated colours as abstract qualities had completely different meanings and valences, which changed as they appeared in reality.

Correlations between Affectothymia and the use of colours in the appartement

Table 1: Significant correlations between Affectothymia and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E2					-.41*					
E17								.35*		
E18					-.35*			.35*		
E26									-.39*	
E43	-.36*									
E55			-.42**							
E57		.40*								
E71		-.37*								

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E2.....anteroom walls

E17.....wardrobe curtain(s)

E18.....wardrobe carpet

E26.....sitting-room chandelier

E43.....cooker

E55.....armature elements

E57.....bath-room furniture

E71.....study ceiling

Highly affectothymic subjects tended to use blue bath-room furniture ($r = .40$), white curtains in the wardrobe ($r = .35$) and white on the wardrobe carpet ($r = .35$). Contrary to this schizothymia correlated with the use of red for the cooker ($r = .36$), blue for the anteroom floor and the ceiling of the study ($r = .37$), yellow (i. e. golden) for the

armature elements, i. e. pipes, etc. ($r = .42$), violet for the corridor's ceiling and wardrobe carpet and black for the chandelier in the sitting-room.

The results were not in accordance with our expectations. Warm, soft, emotional, expressive and trustful persons were supposed to use warm colours which should create a friendly atmosphere. Still, no significant correlation confirmed our hypothesis. The use of blue in the bath-room appeared very often because of its association with water and should not be considered an expression of strong emotionality and friendliness. Contrary to this most of the correlations between schizothymia and the use of colours in the appartement revealed schizothymics' bad taste, which was probably the result of their reservedness, coldness and toughness.

Correlations between General intelligence and the use of colours in the appartement

Table 2: Significant correlations between General intelligence and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E3										-.37*
E5	-.40*									.38*
E11									.40*	
E12									-.37*	
E13									-.37*	
E14									-.37*	
E17		-.34*								
E30							.36*			
E38							.41*			
E53								.37*		
E59									-.42*	
E60									-.37*	
E67									-.39*	

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E3.....anteroom ceiling

E5.....anteroom cupboard

E11.....wardrobe floor

E12.....wardrobe walls

E13.....wardrobe ceiling

E14.....wardrobe cupboard

E17.....wardrobe curtain(s)

E30.....dining-room floor

- E38.....dining-room carpet
 E53.....toilet-seat
 E59.....bedroom floor
 E60.....bedroom walls
 E67.....bedroom curtain(s)

People with high mental abilities appreciated blue curtains in the wardrobe ($r = .34$), and brown on the floor ($r = .36$) and the carpet ($r = .41$) of the dining-room. Besides, they chose white for the toilet-seat ($r = .37$) and gray for the anteroom cupboard ($r = .38$). Subjects with low mental abilities chose red for the same piece of furniture (anteroom cupboard) and gray for the anteroom ceiling ($r = .37$). The most salient characteristic of the subjects with low mental abilities was their use of black. Low intelligence namely significantly correlated with the use of black in the wardrobe (wardrobe floor ($r = .40$), walls ($r = .37$), ceiling ($r = .37$), and cupboard ($r = .37$)), and in the bedroom (bedroom floor ($r = .42$), walls ($r = .37$), and chandelier ($r = .39$). This was very impractical and revealed the absence of mental flexibility. Such a frequent use of black, particularly on walls would function extremely depressive and have other unpleasing effects, as well. It was also difficult to understand why all significant correlations between the general intelligence and the use of black were negative. Black was namely considered to be an elegant and aesthetic colour.

Correlations between Ego-strength and the use of colours in the apartment

Table 3: Significant correlations between Ego-strength and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E9					-.35*					
E11								-.39*		
E26										-.34*
E28							.37*			
E37	-.37*									
E43									.37*	
E61										-.34*
E69		-.36*								.41*
E70				-.35*						
E73				-.35*						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

- E9.....intercomsystem
- E11.....wardrobe floor
- E26.....sitting-room chandelier
- E28.....sitting-room carpet
- E37.....dining-room curtain(s)
- E43.....cooker
- E61.....bedroom ceiling
- E69.....study floor
- E70.....study walls
- E73.....study chair

Almost all correlations between ego-strength and the use of chromatic colours were negative. The only exception was brown, which was used for the sitting-room carpet ($r = .37$). Beside white brown was the most frequent colour that appeared in apartments and most of the elements of the sitting-rooms (floors, couches, tables, cupboards, and carpets) were chosen to be brown by the majority of the subjects. It was also the most popular colour of furniture in all places. As the colour of natural materials (particularly of wood and cork) it symbolized warmth, home and peace.

There was a negative correlation between ego-strength and the use of red for the curtains in the dining-room. In our previous studies (Kovačev, 1992; 1994a; 1994b; 1994c) red proved to be a very emotional colour with many symbolic meanings. Its energetic potential was very strong, while its valence varied. Therefore it was chosen by emotionally unstable and unadaptable persons, which had difficulties with their self-control. Still, from the functional and aesthetic point of view, red curtains would be very suitable for the dining-room, for they would stimulate appetite. Therefore it was very surprising that most of the subjects (81%) chose white for the dining-room curtains. Red might have been perceived as too bright and salient by the majority of them.

It was much more difficult to explain negative correlations between ego-strength and the use of blue on the study floor ($r = -.36$) and green on its walls ($r = -.35$) and cupboard ($r = -.35$). Still, neuroticism that often appeared in people with low ego-strength, their weak self-control, and low frustration tolerance had to be somehow connected with the preference of calming colours, which did not cause any excitement. Their use in a study, which should be furnished in warm and stimulating colours was not very practical, but it coincided with the low adaptability of the subjects with low ego-strength.

Ego-strength correlated with the use of all achromatic colours, as well. Its correlation with the use of white on the wardrobe floor was negative ($r = -.39$), while its correlation of the use of black for the cooker was positive ($r = .37$). Both correlations surprised us, for the colour choices were very impractical. White on the floor would get dirty very quickly, and black cookstove would be difficult to clean, because the spots on it would not be seen clearly.

Persons with high ego-strength chose dark gray on the floor of the study ($r = .41$), which had practical consequences. Dark gray floor could not get dirty as quickly as the black or white one. Therefore it could be concluded that mature and realistic persons looked for practical solutions in furnishing apartments. The solutions of emotionally unstable, impulsive, and excitable persons were probably determined by their momentary mood, for they did not think about the consequences of their decisions.

Correlations between Dominance and the use of colours in the apartment

Table 4: Significant correlations between Dominance and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E15								-.38*		
E26								-.40*		
E68			-.36*			-.38*				
E79								-.43**		
E83							-.40*			
E89			-.35*							

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E15.....wardrobe dress-hangers

E26.....sitting-room chandelier

E68.....bedroom carpet

E79.....study carpet

E83.....nursery bed

E89.....nursery carpet

Correlations between dominance and the use of colours in furnishing appartments did not confirm all our hypotheses. There were expected many positive correlations with red and negative with blue. In the traditional symbolism red represented the active, male principle, which could be translated to psychological terms as masculinity. Its main characteristics coincided with Cattell's dimension of dominance. The latter was namely characterized by self-confidence, competitiveness, rebelliousness, aggressiveness, independence, and activity. Contrary to red blue symbolized the passive, female principle, which often coincided with Cattell's submission. Submissive persons were denoted as soft, tender, humble, adaptable, conformable, passive, dependent and anxiously exact. In spite of many common traits of the traditional colour symbolism and the primary personality factor E (Dominance), there were no

significant correlations between it and the use of any of both colours. Instead of them some other significant correlations appeared.

Submission correlated with the use of yellow for the carpet in the bedroom ($r = .38$) and nursery ($r = .35$), orange for the carpet in the bedroom ($r = .38$), and brown for the bed in the nursery ($r = .40$).

Correlations between Surgency and the use of colours in the apartment

Table 5: Significant correlations between Surgency and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E4			.39*							
E10										-.34*
E19						.36*				
E60			-.38*							
E66			-.34*				-.34*			
E83						.40*				
E84						.41*				
E85						.37*				
E86						.37*				

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E4.....anteroom coat-racks

E10.....anteroom lights

E19.....sitting-room floor

E60.....bedroom walls

E66.....bedroom chandelier

E83.....nursery bed

E84.....nursery wardrobe

E85.....nursery table

E86.....nursery chair

Surgency correlated with the use of yellow, orange, and gray. Surgent, i. e. exuberant and enthusiastic subjects used yellow for coat-racks in anteroom ($r = .39$), while serious, sober, quiet, or even depressive (i. e. desurgent) persons used it most frequently for the bedroom walls ($r = .38$) and chandelier ($r = .34$). The use of yellow in anteroom refreshed its looking and made it more vivid and optimistic. Light yellow on the bedroom walls and chandelier was not very salient. It made it look harmonious and enabled good sleeping and relaxation.

Orange was considered to be a strong, salient, and sometimes even intrusive colour. Surgent persons often used it for the sitting-room floor ($r = .36$), which was a little unusual, and for all pieces of furniture in the nursery (i. e. bed ($r = .40$) cupboard ($r = .41$), table ($r = .37$), and chair(s) ($r = .37$)). This did not surprise us, for the surgency characteristics, i. e. enthusiasm, responsiveness, energy, activity, liveliness, and optimism, coincided with the main meaning implications of orange. Surgency also correlated with the use of brown for the chandelier in the bedroom. The colour of wood was often combined with slightly coloured glass. It evoked the impression of warmth, peace, and home.

Correlations between Superego-strength and the use of colours in the appartement

Table 6: Significant correlations between Superego-strength and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E3					-.37*					
E11		-.37*								
E13		-.37*								
E14					-.37*					
E15					-.37*					
E26									-.34*	
E27								.41*		
E30			-.35*							
E53			-.37*							
E57				-.35*						
E67								.35*		
E69		-.39*								
E72				-.38*						
E74				-.38*						
E84						-.35*				

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E3.....anteroom ceiling

E11.....wardrobe floor

E13.....wardrobe ceiling

E14.....wardrobe cupboard

E15.....wardrobe dress-hangers

E26.....sitting-room chandelier

E27.....sitting-room curtains

E30.....dining-room floor

E53.....toilet-seat

E57.....bath-room furniture

E67.....bedroom curtain(s)

E69.....study floor

E72.....study table

E74.....study cupboard

E84.....nursery wardrobe

Superego-strength correlated with the use of blue, yellow, green, violet, orange, white, and black. Significant correlations with blue were negative which was a little surprising for blue was regarded as a spiritual colour, far away from the earthly matters, and as a colour of passivity, reservedness, calmness and conformism. Its use should be connected with high superego-strength, which would imply conscientiousness, perseverance, assiduity, strong moral feelings, feeling of responsibility, planning, and devotedness to home and family life.

Persons with low superego-strength, which did not care about rules, obligations, and duties, and were neither very laborious nor very responsible, chose blue for the wardrobe floor ($r = .37$), wardrobe ceiling ($r = .37$), and study floor ($r = .39$). They also chose yellow for the dining-room floor ($r = .35$) and toilet-seat ($r = .37$). It seemed a little unusual to choose yellow for the floor. As the colour of the air it would not be particularly convenient for this element of the apartment. Still, it could symbolize the frivolousness of its users, who were not standing on the firm floor with the burden of obligations, carried by the persons with high superego-strength.

Besides low superego-strength correlated with the use of green for the bath-room furniture, and for the study table and cupboard. It also correlated with the use of violet for the anteroom ceiling, wardrobe cupboard and wardrobe dress-hangers as well as with the use of orange for the nursery cupboard.

Superego-strength correlated with the majority of chromatic colours. Still, all its correlations with them were negative which could mean that conscientious and responsible people with strong moral duties did not tend to use many colours in their home. This was particularly obvious in the cases when the use of a certain colour would not be considered appropriate for that specific surface or piece of furniture by the majority of people. Persons with a weak superego namely tended to choose unusual colourings according to their momentary impulses.

Considering the use of achromatic colours one can see that there was a significant positive correlation between superego-strength and the use of white and significant negative correlation between it and the use of black. This result was in accordance with our expectations for in the traditional symbolism white was the symbol of moral as well as physical purity and all other positive characteristics, while black represented its negative pole, and symbolized the absence of light, depth, and the unconscious.

Correlations between Parmia and the use of colours in the appartement

Table 7: Significant correlations between Parmia and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E6								.35*		
E11								.38*		
E19								.35*		
E80	-.45**			-.36*						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E6.....anteroom table

E11.....wardrobe floor

E19.....sitting-room floor

E80.....nursery floor

Parmia correlated only with the use of two chromatic colours, i. e. red (r_1) and green (r_2) for the floor in the nursery. Both correlations were negative ($r_1 = -.45$, $r_2 = -.36$). This was very surprising, for parmia persons were denoted as spontaneous, uninhibited, adventurous, active, impulsive, and friendly. Because of that it was expected that there would be a positive correlation between this personality factor and the use of red, which symbolized similar qualities and was also preferred by children.

There were three significant correlations between parmia and the use of white colour. The subjects with high scores on this dimension preferred white for the table in the anteroom ($r = .35$), and for the floor in the wardrobe ($r = .38$) as well as in the dining-room ($r = .35$). The first colour choice was easy to explain for a white table could enliven the dark anteroom, while the second two colour choices seemed very unusual. The solution was very impractical, but could be explained by the subjects' adventurousness and proneness to risk taking.

Correlations between Premsia and the use of colours in the appartement

Table 8: Significant correlations between Premsia and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E4									-.37*	
E68						.36*				
E82						-.39*				

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E4.....anteroom coat-racks

E68.....bedroom carpet

E82.....nursery ceiling

Premisia and harria (which coincided with tender- and tough-mindedness) correlated with the use of orange and black. Premisia correlated with the use of orange for the bedroom carpet ($r = .36$), while harria correlated with its use for the ceiling in the nursery ($r = .39$). Orange as an optimistic colour was probably chosen by tender-minded persons because of its lightness and association with sweetness of oranges. Tender-mindedness was namely characterized by softness, mildness, tenderness, need for care, attention, support, and impracticality, which might determine the use of orange on the floor. Contrary to this it was very difficult to find out what made tough-minded persons to choose orange for the ceiling in the nursery. It might be their stereotype of children as tender beings, which needed to be surrounded by warm colours. Tough-minded persons also used black for the coat-hangers in the anteroom ($r = .37$), which coincided with their realism and practicality.

Correlations between Protension and the use of colours in the appartement

There was no significant correlation between Protension and the use of any colour in furnishing the appartement.

Correlations between Autia and the use of colours in the appartement

Table 9: Significant correlations between Autia and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E1							-.34*			
E58				.36*						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E1.....anteroom floor

E58.....bath-room carpet

Autia correlated with the appearance of green on the bath-room carpet ($r = .36$), while praxernia correlated with the use of brown on the anteroom floor ($r = .34$). The use of a green carpet in the bath-room might evoke association with water which could be related to unconventionality, creativity, disinterest for ordinary things, that were characteristic for people, whose visions of the world coincided with their personal wishes and not with the reality. Practical people used brown colour on the floor of the anteroom quite often. Brown as the most realistic of all colours suited their personality traits to which belonged conventionality, carefulness, and adaptability.

Correlations between Shrewdness and the use of colours in the apartment

Table 10: Significant correlations between Shrewdness and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E15				.44**						
E64				.44**						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E15.....wardrobe dress-hangers

E64.....dressing table

Shrewdness correlated with the use of green for dress-hangers in the wardrobe ($r = .44$) and dressing table in the bedroom ($r = .44$). This result was not in accordance with our expectations. It was namely supposed that shrewdness would correlate with the use of black, violet, golden or silver colour in anteroom, sitting-room and bedroom. These colours namely often give the impression of solemnity, elegance and preciousness. Violet and black were expected to appear on the couch and armchairs in the sitting-room, and on the bed-spread in bedroom. Black, golden, and silver were expected to appear on the cupboards in the rooms mentioned above, on the dressing table in bedroom, and on the coat-racks in anteroom.

The high positive correlation between shrewdness and the use of green did not confirm our hypotheses. The colour of nature was expected to be preferred by natural, immediate, unsophisticated, naive, and sentimental persons.

Correlations between Guilt proneness and the use of colours in the appartement

Table 11: Significant correlations between Guilt proneness and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E47			.37*							
E51							.40*			
E52							.40*			
E53							.40*			
E65				.34*						
E67				.46**						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E47.....bath-room floor

E51.....bath-room wash-basin

E52.....bath-room bidet

E53.....toilet-seat

E65.....bedroom chairs

E67.....bedroom curtain(s)

Guilt proneness correlated with the use of yellow on the bath-room floor ($r = .37$), green for the bedroom chairs ($r = .34$) and curtains ($r = .46$), and brown for wash-basin ($r = .40$), bidet ($r = .40$), and toilet-seat ($r = .40$). Yellow was perceived as an optimistic colour. Therefore it might evoke some positive feelings in shy, uncertain, unsocialized, and depressive persons, full of sorrows and anxiety. The same would be expected of green, whose calming effects on the organism could be used in the bedroom, which should enable the subjects to rest and relax. Green was sometimes perceived as a little boring colour, which might cause sleepiness, that would be necessary for the relaxation of anxious and guilt-prone people. The positive meanings of brown which prevailed, when it was used as a colour of the furniture, were often associated with the warmth of natural materials, such as wood and cork. Besides warmth, brown also symbolized safety, security, rest, return and home. These characteristics could have influenced its popularity among guilt prone subjects. Still, the reasons for its use in bath-room were different. It might have been chosen because shy, anxious and uncertain people, with strong feelings of guilt were worried about their ability to clean these elements. If they had been white the spots would have been noticed at once.

Correlations between Radicalism and the use of colours in the appartement

Table 12: Significant correlations between Radicalism and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E27		.37*								
E39					-.38*					
E57										-.34*

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E27.....sitting-room curtains

E39.....kitchen floor

E57.....bath-room furniture

Radicalism correlated with the use of blue for curtains in the sitting-room ($r = .37$), while conservatism correlated with the use of violet for the floor in the kitchen ($r = .38$) and gray for the bath-room furniture ($r = .34$). It was very difficult to find out why radical, critical and liberal subjects, which liked to make experiments and search for new alternatives, preferred blue in the sitting-room. Blue was namely often associated with passivity, coldness, and conformity. It would be much more likely for them to chose bright and salient colours.

The only interpretable correlation was the correlation between conservatism and the use of gray for the bath-room furniture ($r = .34$). Gray was namely considered to be dull, boring, indefinite, neutral, and dim, which coincided with reservedness, traditionalism, and inexpressiveness of conservative people.

Correlations between Self-sufficiency and the use of colours in the appartement

Table 13: Significant correlations between Self-sufficiency and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E5						.35*				
E15										.35*
E25				-.36*						
E42					-.36*					
E43					-.36*					
E45									.35*	
E63						-.34*				
E64						-.36*				
E65						-.36*				

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E5.....anteroom cupboard

E15.....wardrobe dress-hangers

E25.....sitting-room cupboard

E42.....kitchen unit

E43.....cooker

E45.....kitchen light

E63.....bedroom wardrobe

E64.....dressing table

E65.....bedroom chairs

Self-sufficiency correlated with the use of orange for the anteroom cupboard ($r = .35$), black for the light in the kitchen ($r = .35$), and gray (i. e. silver) for the wardrobe dress-hangers ($r = .35$). Individualistic personalities namely liked to chose unusual decisions by which they stressed their singularity. Besides orange cupboard was very appropriate for the dark anteroom which was enlivened by it. The same held true for the silver dress-hangers.

Group orientation correlated with the use of green for the cupboard in the wardrobe ($r = .36$), violet for kitchen unit ($r = .36$) and cooker ($r = .36$), and orange for the bedroom cupboard ($r = .34$), dressing table ($r = .36$), and chairs ($r = .36$). Green and orange were chosen by sociable and dependent people because of their psychophysiological effects on the organism. Green was supposed to create a friendly atmosphere in the anteroom, while orange should bring some warmth into the bedroom.

Correlations between Self-control and the use of colours in the apartment

Table 14: Significant correlations between Self-control and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E1										.36*
E5									-.40*	
E6									-.37*	
E12										.39*
E43										.44*
E61				.35*						

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

E1.....anteroom floor

E5.....anteroom cupboard

E6.....anteroom table

E12.....wardrobe walls

E43.....cooker

E61.....bedroom ceiling

High self-control correlated with the use of green for the bedroom ceiling ($r = .35$) and the use of gray on the anteroom floor ($r = .36$), wardrobe walls ($r = .39$) and cooker ($r = .44$). Green on the bedroom ceiling should calm down persons taken over by passions and enable relaxation, rest and sleep. The effects of gray were even less stimulating. Gray was considered to be the least exciting and rather boring colour, which should enable discipline, self-control, and exactness.

Low self control correlated with the use of black for the anteroom cupboard ($r = .40$) and table ($r = .37$). Black was namely a colour with many negative and hidden meanings, which would not always suit rational, careful, and conscientious people. It was also the colour of passions, night, and unconscious desires.

Correlations between Ergic tension and the use of colours in the appartement

Table 15: Significant correlations between Ergic tension and the use of colours in the appartement

	RED	BLUE	YELL	GRE	VIOL	ORA	BRO	WHI	BLAC	GRA
E9								.36*		
E18	-.35*									
E37	.35*									
E39			-.35*							
E57								.37*		
E67		-.36*								
E76								.38*		
E85	-.39*									
E89	-.37*									

Levels of significance:

* $p < 0.01$

** $p < 0.001$

LEGEND:

- E9.....intercomsystem
- E18.....wardrobe carpet
- E37.....dining-room curtain(s)
- E39.....kitchen floor
- E57.....bath-room furniture
- E67.....bedroom curtain(s)
- E76.....study telephone
- E85.....nursery table
- E89.....nursery carpet

High ergic tension correlated with the use of red for the dining-room curtains ($r = .35$), while other significant correlations between it and red were negative. Red might namely excite irritable, frustrated, impatient, and restless subjects. Still, from the functional point of view the use of red in the dining-room was very practical, for red was often associated with sweetness and because of that it could stimulated appetite.

High ergic tension also correlated with the use of white for the intercom-system in the anteroom ($r = .36$), bath-room furniture ($r = .37$), and telephone in the study ($r = .38$). White as a neutral colour was preferred by restless and excitable people because it did not have any additional stimulating effects on their organism.

Low ergic tension, which was characterized by calmness, phlegm, satisfaction, loose, and low achievement motivation, correlated with the use of red for the wardrobe carpet ($r = .35$), nursery table ($r = .39$), and nursery carpet ($r = .37$). It also correlated with the use of blue for the bedroom curtains ($r = .36$) and yellow for the kitchen floor ($r = .35$).

Calm and loose people could not be irritated by the stimulating effects of red. On the contrary that would even suit them. Besides, red was very popular among children and because of that it was suitable for their room. The use of blue and yellow were understandable, as well. Blue bedroom curtains enabled relaxation, while the effects of yellow on the kitchen floor were stimulating.

CONCLUSIONS

The use of colours in the furnishing of appartments was governed by a few general rules. Most of them were the result of stable traditional rules for the use of colours in appartments, their physiological effects and their symbolic meanings. The subjects often chose brown for the floor and white for the walls and ceiling. There were no significant differences between the use of these colours in different places. Most peaces of furniture were brown because of the natural colour of the wood, which they were made of. The predominant colour of lights and curtains was white. The barhroom was often furnished in the natural water colours, i. e. blue and green, while the nursery was

furnished in bright, warm and vivid colours. These should namely create a warm and friendly atmosphere.

There were also some significant correlations with the personality traits measured by Cattell's 16PF Questionnaire. Still, there were not many general rules. Therefore each correlation needed a special interpretation.

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