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Personality, training in the visual arts and aesthetic preferences for line drawings

Master's Thesis

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Running head: personality, training and aesthetic preferences

Tartu 2004

Abstract

Personality, training in the visual arts and aesthetic preferences for line drawings

The study was concerned with the following questions: 1) which personality variables are characteristic to artists; 2) which formal properties of line drawings determine the preferences of artists and non-artists; 3) what is the role of training in art and personality variables (including the 'Big Five' personality traits and demographic variables such as age or sex) in aesthetic preferences. Data from 113 men and 351 women were obtained on the Welsh Figure Preference Test (Welsh, 1987), the Art Experience Scale and the NEO Personality Inventory (Costa & McCrae, 1992). Factor analysis of the Welsh Figure Preference Test items identified seven interpretable figure dimensions, of which five were highly congruent after Procrustes rotation. Art students and non-artists, as well as men and women were compared on personality dimensions and on the figure dimensions. Finally, several regression models were developed to clarify the relationship between training in art and personality in aesthetic preferences. The results show that artists have a characteristic personality profile, with high Neuroticism, high Openness and low Conscientiousness. The hypothesis that certain personality dimensions would be particularly relevant to assessing aesthetic preferences was confirmed - Openness to experience and Agreeableness were related to specific figure dimensions. Training in the arts, gender and personality traits in combination were significant contributors to aesthetic preferences.

Summary in Estonian

Sisukokkuvõte

Isiksuse ja kunstihariduse seosed visuaalsete kujundite esteetiliste eelistustega

Uurimus käsitles esteetiliste hinnangute aluseks olevaid võimalikke tegureid. Lähemalt vaadeldi 1) missugused isiksuse omadused on iseloomulikud kunstnikele; 2) missugused kujundite struktuuriomadused on seotud nende meeldivusega; 3) kuidas seostuvad omavahel kunstiharidus, isiksuse omadused ja esteetilised eelistused. Kokku osales uurimuses 113 meest ja 351 naist, kes täitsid Welshi Kujundite Eelistuse Testi (Welsh, 1987), kunstihariduse küsimustiku ja NEO-PI-R isiksuse küsimustiku (Costa & McCrae, 1992). Welshi Kujundite Eelistuse Testiga läbiviidud faktoranalüüsi alusel grupeerusid kujundid seitsmesse hästi tõlgendatavasse rühma, millest viis olid Prokrustese pööramise järel väga sarnased. Isiksuse, kunstihariduse ja esteetiliste eelistuste vahelisi seoseid võrreldi eraldi kunstiharidusega ja kunstihariduseta inimestel, samuti meestel ja naistel. Lõpuks testiti mitmeid regressioonmudeleid, et selgitada nii isiksuse kui kunstihariduse rolli esteetilistes eelistustes. Tulemused näitavad, et kunstnikel on iseloomulik isiksuse profiil: kõrge neurootilisus, kõrge avatus ja madal meelekindlus. Kinnitust leidis hüpotees, et teatud isiksuseomadused seostuvad esteetiliste eelistustega – avatus ja sotsiaalsus seostusid kindlate kujundite rühmadega. Kunstiharidus ja sugu koos antud isiksuseomadustega olid olulised esteetiliste eelistuste ennustajad.

Introduction

Although researchers have approached aesthetic preferences from various perspectives and with different questions in mind, the general aim of experimental aesthetics is to explain aesthetic reactions of the individual. One of the underlying assumptions of all this research is that in order to judge a painting, drawing or some other aesthetic stimuli as pleasing, the individual must have certain characteristics, and agreement among observers is only reached when they share common properties (Hekkert & van Wieringen, 1996b). The search for these attributes of the individual has mainly focused on personality characteristics, training in the arts[*], gender and social background. Another line of research is concerned with the characteristics of the aesthetic stimuli themselves, arguing that certain structural properties 'govern aesthetic appreciation' (Berlyne, 1971).

The present study investigates the associations between personality traits, expertise level of the recipient and structural properties of drawings, assuming that accounting for aesthetic preferences of the individual requires linking the characteristics of the individual to characteristics of the aesthetic stimuli. Of special interest are the personality dimensions of the artists.

Characteristics of aesthetic stimuli

Aesthetic preference studies comprise in effect of two large bodies of literature - the aesthetics of simple forms and the aesthetics of real works of art (Zusne, 1970). Since Fechner's pioneering work on the golden section of rectangles (1876), the aesthetics of simple figures has been extensively investigated. Sometimes it is referred to as 'synthetical' approach to aesthetics (Berlyne, 1974), because the studies use artificially

[*] There are several concepts in use (eg sophistication in art, expertise in art, training in art), which refer to people who study or have studied art at a university level. In the present study the concepts of trained subjects, artists and experts are used synonymously. In contrast, people in general are referred to as the general student group, untrained subjects or non-artists.

generated, relatively simple nonrepresentational stimulus patterns like rectangles (Farnsworth, 1932; Chevrier & Delorme, 1980; Hekkert, Peper & van Wieringen, 1994), circles (Hare, 1974), colour chips (Martindale, Moore & Borkum, 1990), squares (McManus, 1980) or random polygons (Day, 1967; Eysenck, 1972b; Rawlings, Twomey, Burns & Morris, 1998). The important thing about these studies is that the stimulus dimensions allow experimental manipulation so that lawful relations between subjective preference and objective stimulus properties could be observed. Furthermore, the preferences of an individual are stable in time (McManus, 1980). Overviews of studies with simple stimuli can be found in Zusne (1970) and Berlyne (1971).

While reactions to relatively simple stimuli are not comparable to reactions to real works of art, these simple figures are frequently found among the *elements* of works of art (Berlyne, 1974). Locher, Gray & Nodine (1996) put it simply: 'A picture, before it is a picture, consists of shapes, forms, lines, and colours arranged in a certain order.' This approach regards also art as composing of certain structural properties, which can be isolated from the whole in order to investigate their effects on individual's aesthetic preferences (Neperud & Marschalek, 1988).

One proponent of this line of research was Daniel Berlyne, who announced the 'new experimental aesthetics' (Berlyne, 1971, 1974), which was to dominate the field ever since. According to Berlyne, one must start the investigation of structural properties with relatively simple, constructed stimuli and gradually work its way up to real works of art. Having started with work on motivation, Berlyne saw aesthetic behaviour in a larger context of preference behaviour. His persistent research resulted in the famous inverted U-shaped relationship between pleasure and arousal potential: moderate levels of arousal potential are most liked, while very high and very low arousal potential produce aversive effects. Since arousal potential is in part evoked by collative properties (complexity, novelty, uncertainty or variety of elements and surprisingness), then they are largely responsible for pleasure. To put it bluntly and with respect to aesthetic preferences, people like pictures that represent moderate amount of complexity, novelty or variety.

Largely due to his theory, studies with constructed stimuli started with a new vigour and resulted in an impressive body of evidence showing that the collative properties, and especially the dimension of complexity, determine aesthetic preferences

(Day, 1967; Eysenck & Castle, 1970a; Berlyne, 1974; Frith & Nias, 1974; Hare, 1974). However, many researchers do not distinguish between complexity and other collative properties and regard them all as part of complexity. At the same time, there is evidence that separating complexity into several lower-order concepts is not necessary. For example, the dimension of symmetry has sometimes been treated separately from complexity, only to conclude that it plays a relatively minor role in preference (Locher, Stappers & Overbeeke, 1998; Frith & Nias, 1974). In fact, the dimensions of symmetry and complexity are often impossible to distinguish (Moyles, Tuddenham & Block, 1965), that is, the figures judged as complex are also asymmetrical and figures judged as simple are symmetrical.

Regardless of contrary evidence concerning the importance of collative properties (Martindale & Moore, 1988; Martindale, Moore & West, 1988; Martindale, Moore & Borkum, 1990; Rawlings et al, 1998) and the relationship between preference and exposure (Zajonc, Shaver, Tavris & van Kreveld, 1972; Bornstein, 1989), Berlyne's theory is hitherto very influential. The questions put forth by Berlyne are still of great importance to experimental studies of aesthetic preferences. For example, the search for common properties of artworks or other aesthetic stimuli is continuously one of the central themes in research. Martindale (1988, 1990, 2001) offered a cognitive theory of aesthetic preferences that is based on neural network models of human cognition. He maintains that stimulus typicality and meaningfulness are more important determinants of preference than collative properties because typical stimuli give rise to stronger activation of cognitive categories. The theory has gained strong support from both analytical and synthetical lines of research (Shortess, Clarke, Richter & Seay, 2000; McLaughlin, Dunkle & Brown, 1999; Rawlings et al, 1998; Hekkert & van Wieringen, 1990). In fact, there is no reason why the theories of Berlyne and Martindale cannot coexist alongside; neither of them explains aesthetic experience entirely, but both of them contribute to our understanding of aesthetic processes (North & Hargreaves, 2000). These theories are not restricted to aesthetic preferences, but rather view them in a broader psychological context, giving coherence to different findings and relating them to human functioning in general.

It has become clear that the synthetical approach does not account for large number of problems encountered in studies that use real works of art as stimuli. Simply replacing synthetic approach with another, namely with 'analytical' approach, 'in which reactions to genuine works of art are investigated with a view to unraveling their determinants' (Berlyne, 1974) created new difficulties – lack of systematic control of stimulus dimensions even in carefully selected samples of artworks, making it if not impossible then very hard to tell what individuals are attending to (Osborne & Farley, 1970; Hardiman & Zernich, 1977; Neperud & Marschalek, 1988; Hekkert & van Wieringen, 1996a). In other words, it lacks the very same quality that is the advantage of synthetic approach.

As a rule, works of art are selected by some explicit criteria such as style (Berlyne, 1975; Roubertoux, Carlier & Chaguiboff, 1971), subject matter (e.g. portraits or landscapes) or by more obscure qualities like emotional tone (Rawlings, 2000) and order (Juhasz & Paxson, 1978). Of course, it is impossible to subtract the stylistic dimension from other qualities of paintings. Therefore, many studies employ several criteria simultaneously, trying to control for differences in style in addition to other criteria (Zuckerman, Ulrich & McLaughlin, 1993; Heinrichs & Cupchik, 1985). Despite researches' careful selection of the artworks, the findings are rather robust: the consistent findings are first, that people's preferences vary along the dimension of degree of realism and second, that representational works in general are more pleasing than abstract works (Eysenck, 1940; Wilson, Ausman & Mathews, 1973; Tobacyk, Bailey & Myers, 1979; Cupchik, Spiegel & Shereck, 1996; Hekkert & van Wieringen, 1996a; Furnham and colleagues, 1997, 2001a, 2001b, 2004).

There is also some support that complexity, besides being a major contributor to the liking of simple figures, partly affects preferences for works of art (McLaughlin, Dunkle & Brown, 1999; Wilson, Ausman & Mathews, 1973; Osborne & Farley, 1970).

The figures of the Welsh Figure Preference Test (WFPT, Welsh, 1987) employed in this study do not clearly belong to neither of the aforementioned categories. In a way, the WFPT can be described as standing between the two usual alternatives of simple stimuli that lack aesthetic value (Hekkert and Snelders, 1995) and very complex real

works of art. The WFPT includes many simple designs (squares, circles, and variations of lines) as well as more complex and 'artistic' figures. Welsh has identified eight dimensions according to the formal properties of the figures: simple freehand, simple ruled, complex freehand, complex ruled, 'representational' drawings, black and white contrasting figures, dotted and figures combining elements of ruled and freehand lines. Many studies have employed the Barron-Welsh Art Scale (BWAS), which is a short version of the WFPT, designed to measure aesthetic sensitivity (Barron & Welsh, 1952). Eysenck & Castle (1970b) demonstrated that the BWAS figures represent several kinds of complexity – complex geometrical drawings, complex freehand drawings and representational drawings. There has also been one attempt to use the WFPT as a source material for developing a pictorial personality measure (Zuckerman, Bone, Neary, Mangelsdorff & Brustman, 1972).

Characteristics of individuals

Personality traits and aesthetic preferences

Aesthetic preferences have been investigated in connection with different personality constructs like conservatism (Wilson, Ausman & Mathews, 1973; Furnham & Walker, 2001b), radicalism-conservatism (Eysenck, 1941), sensation seeking (Zuckerman, Ulrich & McLaughlin, 1993; Furnham & Walker, 2001a; Rawlings et al, 1998), field dependence (Child, 1965; Tobacyk, Myers, & Bailey, 1981), locus of control (Juhasz & Paxson, 1978) and tolerance of ambiguity (Child, 1965; Furnham & Avison, 1997). We can describe many of these personality constructs in the Big Five conceptual space – they simply reflect different aspects of Openness to experience. For example, Openness associates with sensation seeking (McCrae & Costa, 1997) and conservatism can be described as the negative pole of Openness (McCrae, 1996). Openness is related to aesthetic preferences of any kind – preferences for different styles of paintings (Rawlings, 2000; Furnham & Avison, 1997; Furnham & Walker, 2001a, 2001b; Furnham & Chamorro-Premuzic, 2004) or photography (Rawlings, 2003).

Openness is characterised by McCrae (1996) as 'need for novelty, variety and complexity' as opposed to Closedness, which is 'manifested in a preference for

familiarity, simplicity, and closure'. This suggests that open persons should prefer complex and varied stimuli to simple ones, as previously also found (for example, Barron & Welsh, 1952; Child, 1965). The basic idea behind this is that people like stimuli that are in some way similar to them (Alexander & Marks, 1983; Juhasz & Paxson, 1978; Moffett & Dreger, 1975). From a theoretical viewpoint, certain personality characteristics could play a causal role in the development of artistic interests or at least modify the course of their expression (McCrae & Costa, 1997).

Studies concerned with the personality of the artists show that compared to people in general artists are more neurotic, open to new experiences, tender-minded and introverted (Roubertoux, 1970; Getzels & Csikszentmihalyi, 1976; Dutta Roy, 1996). McCrae and Costa (1997) write: 'As neurotics can be used as exemplars of high scorers on the dimension of Neuroticism, so artists can be considered prime examples of individuals high in Openness to Experience'. Indeed, Openness is closely related to artistic interests (De Fruyt & Mervielde, 1997). The authors stress that Openness is relevant to an understanding of artistic temperament, yet not many studies have been conducted to explore the personality of artists within the Big Five theoretical framework.

In fact, the idea that Openness is related to aesthetic preferences is not novel at all. Barron & Welsh conducted a study in 1952, on which they based their famous Barron-Welsh Art Scale, with an intention of relating personality style to 'the formal qualities such as unity, clarity, complexity, and so on, from which the esthetic character of objects derives' (Barron & Welsh, 1952). The figures that discriminated between artists and people in general were highly complex and asymmetrical; moreover, the groups differed with respect to personality characteristics. Those subjects who preferred simplicity were conservative, organised, conventional, whereas those subjects who preferred complexity tended to be pessimistic, hostile, depreciative, and admittedly, creative. In addition, Child (1965) characterises aesthetically oriented person as 'a person of actively inquiring mind, seeking out experience that may be challenging because of complexity or novelty, ever alert to the potential experience offered by stimuli not already in the focus of attention, interested in understanding each experience thoroughly and for its own sake rather than contemplating it superficially and promptly filing it away in a category, and able to do all this with respect to the world inside himself as well as the

world outside'. These descriptions are amazingly concordant with the definition of Openness to experience by Costa and McCrae (1992): 'Open individuals are curious about both inner and outer worlds, and their lives are experientially richer. They are willing to entertain novel ideas and unconventional values, and they experience both positive and negative emotions more keenly than do closed individuals.'

Previous studies have yielded quite consistent results concerning the role of neuroticism and introversion in aesthetic preferences. Child (1965) reported a modest positive correlation between aesthetic judgement and anxiety; even controlling for art background did not change that relationship. Getzels and Csikszentmihalyi (1976) in their exceptionally profound longitudinal study of artistic creativity among art students showed that art students are compared with other university students more introverted, more imaginative, less conscientious and conforming. In NEO-PI-R terminology, they are low on Extraversion, Conscientiousness, and high in Openness to experience. Besides, these differences were prominent *within* art student group as well. Fine art students scored much higher or lower in expected direction than applied art students, who were closer to norms. These findings are in agreement with a study of Götz and Götz (1973), where gifted students were more neurotic and introverted compared to ungifted students. In a study with professional artists (Götz & Götz, 1979), they found male artists - but not female artists - to be significantly lower on extraversion than female and male non-artists. In addition, male artists scored much higher on neuroticism than men in general. Thus, male artists' personality differs significantly from norms, but that is not the case with female artists. In a study of Eysenck and Castle (1970a) art students had markedly higher neuroticism, but did not score significantly lower in extraversion than people in general. In a later study, Eysenck (1972a) found art students to be more neurotic and introverted than non-artists.

Many of the reviewed studies have not used the full version of the 'Big Five', settling for shorter versions like NEO-FFI (Furnham & Avison, 1997; Furnham & Walker, 2001a) or using only the Openness scale (Rawlings, 2000; Rawlings, Barrantes i Vidal & Furnham, 2000), for convenience reasons only. Costa and McCrae (1992) stress that NEO-FFI scales are not equivalent to the full domain scales of the NEO-PI-R. According to Paunonen (2003), the short versions of NEO-PI-R result in 'less accuracy in

behaviour prediction and a poorer understanding of behavioural determinants'. There is some evidence that certain subscales of the Openness factor are especially relevant in predicting aesthetic preferences for various types of aesthetic stimuli. Openness to Ideas and Values predicted liking of abstract art, whereas Actions and Feelings failed to show a relation with aesthetic preferences (Kaskmann, 2001).

Clarifying the exact pattern of relations between aesthetic preferences and personality can shed light on both. It would enhance our understanding of the nature of aesthetic preferences as well as personality.

Training in art

Comparisons between so called naïve and expert viewers have proved to be an extremely fruitful line of research. Most of these studies are concerned with the question of how do the aesthetic preferences of trained subjects differ from untrained subjects. A study by Nodine, Locher and Krupinski (1993) showed that the eye-movement patterns of trained individuals indicated that they were more sensitive to the structural organisation of a balanced design than were the untrained participants. Untrained subjects' gaze followed closely pictorial elements (fixated gaze on figures on the foreground), while trained viewers paid more attention overall design (looked more at background figures).

Some structural properties are more important to naïve subjects, while others are more important to trained subjects. For example, untrained subjects value bright colours as such, subject matter and realistic depiction, whereas trained viewers value the compositional elements (lines, shapes, colour) and the relations between them (Child, 1965; Winston & Cupchik, 1992; Nodine, Locher & Krupinski, 1993). Hekkert and van Wieringen (1996a) demonstrated convincingly that colour and degree of realism influence the preference in untrained but not in trained viewers, providing support that the artists view colour as one of the properties of the overall visual structure. Winston and Cupchik (1992) showed that specific preferences are related to general aesthetic principles that are in turn related to art background.

Some studies report that trained subjects *prefer* complexity to simplicity (Barron & Welsh, 1952), while others state the opposite (Eysenck & Castle, 1970a). When

complexity of an artwork is *evaluated*, the artists and non-artists are in agreement (Hekkert & van Wieringen, 1996b), indicating that the experts and people in general have quite similar understanding of complexity.

In light of these findings, the present study limits the stimuli to black and white non-representational figures and forces the untrained subjects to indicate their preference according to formal properties of the figures. The present paper assumes that untrained viewers, like trained subjects, are able to base their preferences on structural qualities when being forced to do so. Some support for this hypothesis comes from studies with abstract paintings (Osborne & Farley, 1970).

Gender differences

There are indications that women and men prefer different stimuli - men prefer angular and sharp artworks and women tend to prefer softer works of art, especially impressionistic works (Polzella, 2000). Women score constantly higher in some traits like Neuroticism and Agreeableness (Costa & McCrae, 1992; Costa, Terracciano & McCrae, 2001) - it is expected that aesthetic preferences would confirm these differences in personality.

Purpose of the Study

The aims of the study were following:

First, to identify the general dimensions of structural properties of the figures that apply both to art-trained and untrained subjects.

Second, to compare the personality of art students and general students in order to specify the characteristic profile of personality dimensions that may influence aesthetic preferences.

Third, to assess the relative importance of personality traits and training in the arts in aesthetic preferences, ‘measured’ by these figurative dimensions.

Hypotheses

1. The factor analysis of the Welsh Figure Preference Test (WFPT) yields eight interpretable factors according to their formal properties (Welsh, 1987). Separate factors will emerge for simple freehand drawings, simple ruled drawings, complex freehand drawings, complex ruled drawings, 'representational' drawings, black and white contrasting figures, dotted figures and figures combining elements of ruled and freehand lines.
2. The effect of training on aesthetic preferences is expectedly significant: art students prefer complex drawings and untrained students prefer simple drawings (Barron & Welsh, 1952). Untrained subjects are also expected to like more 'realistic' depiction – figures with crosshatched lines (Hekkert & van Wieringen, 1990; Winston & Cupchik, 1992; Nodine, Locher & Krupinski, 1993).
3. Males prefer angular forms and ruled lines (ruled simple and ruled complex figures) and women prefer figures with softer lines (dotted figures and figures with freehand lines) (Polzella, 2000).
4. Art students score higher in Openness to experience and Neuroticism; lower in Extraversion and Conscientiousness than non-artists (Getzels & Csikszentmihalyi, 1976; Götz & Götz, 1979; Dutta Roy, 1996).
5. Openness is expected to be positively correlated with liking of various types of drawings (Furnham & Walker, 2001b). Agreeableness is related to figures with soft lines.

Method

Participants

The total sample comprised of 464 participants (351 females and 113 males), ranging in age from 15 to 49 years, with a mean age of 22.8 years (SD=6.5). Six subjects did not study in any of the specified schools and were later included in the non-artist group. The sample consisted of four specific groups:

Open University students from the University of Tartu. With a mean age of 33 years (SD=6.8), this group of sixty-seven females and sixteen males was the most heterogeneous of the four, with respect to age and occupational background. Social workers, psychologists, housewives, army officers, managers, musicians and accountants were among listed occupations. One student had a degree in interior design. Students received two credit hours for participation.

Students of the University of Tartu. Seventy-four females and nineteen males participated, mean age was 21.1 years (SD=2.9) with age ranging from 18 to 32. The sample consisted mostly of undergraduate psychology students, but included students of languages, journalism, social sciences, philosophy and biology as well. Several students had had some formal training in art. Students received two credit hours for participation.

Students of the Tartu Art Gymnasium. Total of 118 students (94 females and 24 males) from 10^{th} and 11^{th} grades with mean age 17 years (SD=1.1) were tested, of whom eighty-six students (seventy-four females and twelve males) specialised in art.

Art students. The 'artist' group (N=164, mean age 22.9 years, SD=3.7) comprised of twenty-three students from the University of Tartu department of painting (15 females, 8 males), sixty-five students from the Estonian Academy of Arts (46 females, 19 males) and seventy-six students from the Tartu Art College (50 females, 26 males). Most students had at least 2 years of education and practice in the visual arts. The sample included also some professional artists, architects, and photographers. The students specialised in fine arts, sculpture, photography, ceramics, and graphic-, fashion-, jewellery-, textile-, furniture- and theatre design.

Measures

1. The *NEO-PI-R* (Costa & McCrae, 1992) consists of 240 items, which measure the 'big five' factors of personality: Neuroticism (N), Extraversion (E), Openness to experience (O), Conscientiousness (C) and Agreeableness (A). Every factor or domain has six subscales or facets. The structure of the Estonian NEO PI-R closely resembles the structure obtained in normative US samples (Kallasmaa, Allik, Realo & McCrae, 2000). Responses are made on a five-point Likert-type scale ranging from 0 (*strongly disagree*) to 4 (*strongly agree*).
2. The *Welsh Figure Preference Test* (WFPT, Welsh, 1987) is composed of 400 black and white figures, the subjects are asked to indicate whether they like or do not like the figures; twenty of the items have been duplicated. The test includes the Barron-Welsh Art Scale (BWAS), which is moderately correlated with training in art (Rump, 1977) and should discriminate between artists and people-in-general. For the purposes of the present study, the full version of the WFPT was used.
3. The *Art Experience Scale* (AES) was formed of eight questions in order to specify the level of engagement in the arts, including interest in art and various questions regarding formal training in the arts (see Appendix A).

Procedure

Subjects rated the 400 line drawings of the Welsh Figure Preference Test in their classroom during class time at a self-paced tempo. Subjects received an individual WFPT booklet and answering sheet, and were instructed to indicate whether they liked or disliked each drawing. They were encouraged to answer spontaneously and only state their personal preference. Next, they filled out the Art Experience Scale. Since most students took the tests during limited time, NEO-PI-R (which usually takes 45 to 60 minutes to complete) was mostly completed at home. This arrangement accounts for the fact that only 291 of subjects completed both of the tests.

Results

Response consistency in ratings of line drawings

To estimate response consistency, twenty of the WFPT figures have been repeated: items 181 through 200 have been duplicated in items 361 through 380. The tetrachoric correlations between the 20 repeated drawings of the WFPT ranged from .82 to .96 (mean r=.89), providing thus evidence of high response consistency.

Evaluation of the Art Experience Scale

The internal consistency of the Art Experience Scale was α=.67. However, reliability increased to .79 after one question – years of attending children's art school - was discarded. The responses to the items ranged from 0 to 18, with a mean of 7.69 (SD=3.91). The frequency table and histogram indicated that the distribution was two-peaked. The scale discriminates between untrained subjects, high-school students specialising in art and subjects majoring in art (mean values were respectively 4.74, 6.49, 11.96; all the differences were significant at a $p<.001$ level). The subjects, who had received formal training in the arts at a university level, were included in the artist group. No significant differences between university students who had studied art over two years or less than two years were observed. Although high school art students differed significantly from the untrained subjects, they will be treated as one group in further analysis. One-way ANOVA confirms that the difference between non-artists and artists is remarkable ($F(1,407)=883.25$, $p=.000$), providing evidence that the scale distinguishes artists from non-artists and it can be used in the following analyses as a measure of training in art.

Replicability and psychometric properties of the NEO-PI-R

In order to evaluate the replicability of the NEO-PI-R factor structure, principal component analysis with varimax rotation was carried out for the 30 facets. Five factors emerged, explaining 61.9% of the total variance. All subscales had their highest loading on the intended factor and none of the primary loadings were below |.45|. The Cronbach alphas for Neuroticism, Extraversion, Openness to experience, Agreeableness and Conscientiousness were .87, .84, .73, .74, and .87, respectively.

Factor analysis of the Welsh Figure Preference Test items

The 380 drawings of the WFPT (20 duplicated drawings were excluded) were submitted to a principal component analysis, followed by varimax rotation. Twenty factors had eigenvalues over 1 – obviously, the Kaiser criterion yields far too many factors. According to parallel analysis - with the mean eigenvalues of six random data sets - thirteen factors should be retained (see Figure 1 for the scree plot with parallel analysis). When extracted and rotated, the thirteen factors proved to be clearly unsatisfactory. The scree plot suggests a seven-factor solution, explaining 36.1% of the total variance. Seven factors provided a simple structure; moreover, they were interpretable and had sufficient number of high loadings (see Appendix B for factor structure). The figure dimensions were labelled according to the classification of Welsh (1987): Ruled Simple, Shading, Freehand Simple, Ruled Complex, Dot, Black and

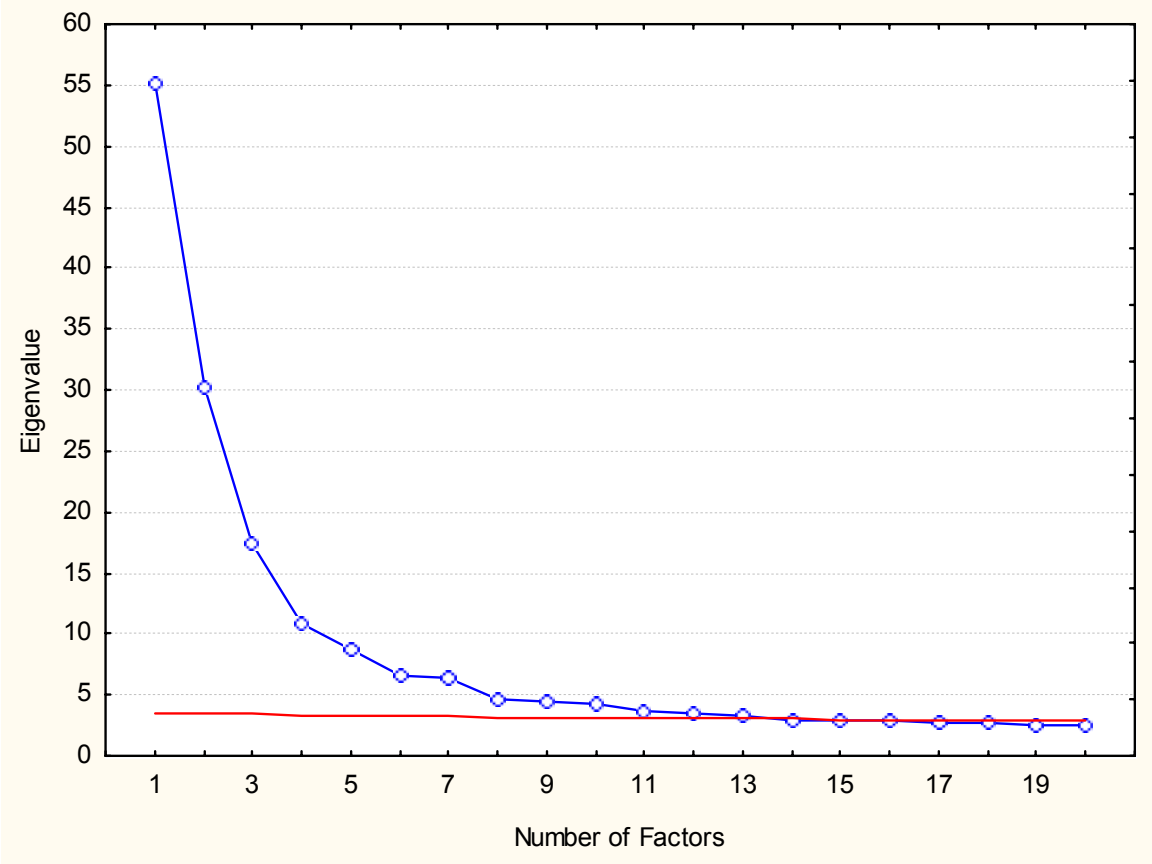

Figure 1. Scree plot with parallel analysis for the principal component analysis of the Welsh Figure Preference Test items

Freehand Complex. Only one hypothesised factor did not appear – the factor that combined ruled and freehand drawings.

If the objective is to compare subjects on emerging dimensions, it is recommended to evaluate whether the factors are stable between the distinct sets of respondents (Everett, 1983). Hence, principal component factor analyses with varimax rotation were carried out separately for artists and non-artists. Tucker's coefficients of congruence for the factors were .93, .90, .85, .58, .84, .27, and .29, respectively for Ruled Simple, Shading, Freehand Simple, Dot, Ruled Complex, Black and Freehand Complex. Two coefficients of congruence exceeded the conventional replication level of .90 and two coefficients show close resemblance between the factors, three other factors show unsatisfactory congruence. To test whether the discrepancies between two factor structures are accounted for by the different orientation of axes (McCrae, Zonderman, Costa, Bond & Paunonen, 1996), an orthogonal Procrustes rotation was carried out. The congruence of Dot factor improved significantly (from .58 to .91). The congruence values for Black and Freehand Complex increased to .74 and .78, respectively. This indicates that the rotational differences are systematic and not arbitrary, reflecting the true differences in aesthetic preferences of art-trained and untrained group. The congruence levels suggest that meaningful comparisons between the two groups can be conducted on five figure dimensions that are very similar in artists and non-artists – Ruled Simple, Shading, Freehand Simple, Ruled Complex and Dot.

The five factors were interpreted as follows:

1. *RS - Ruled Simple*. Items loading highest on this factor were simple geometric forms like triangles, circles, pentagons, and squares, drawn with ruler. Various items depict geometric shapes in relation to lines, arrows and the like. The factor also includes simple designs with zigzag or crossing lines.
2. *SH - Shading*. The drawings can be described as complex and representational in a robust way, implying something real like a ball, tombstone or pyramid. To leave the impression of three-dimensional objects, crosshatched lines are used to suggest shadowing.

3. *FS - Freehand simple*. This factor consists of simple freehand drawings; most of them were geometric forms, varying in size and thickness of pencil. The factor is very similar in content to the first factor, except that the figures are drawn by hand.
4. *RC - Ruled complex*. Items loading high on this factor were very complex, abstract compositions of crossing lines and shapes. Some of the items that should according to Welsh's classifications belong to this factor, loaded (modestly) on the first factor instead.
5. *DOT - Dot/curvy*. Simple dotted geometric forms, dotted abstract figures, as well as dots combined with curvy lines defined this factor. Several designs with curvy lines had a secondary loading on the second (Shading) factor and dotted geometric designs had a secondary loading on the first (Ruled Simple) factor, suggesting that this factor combines borderline items from Freehand Complex category and Ruled Simple category.

Differences between artists and non-artists in personality dimensions

Table 1 reports the descriptive statistics of the untrained students and art students on the personality traits. Figure 2 shows graphically the trends evident in Table 1 with respect to the relationships between training in the arts, gender and personality traits. A 2 (training: non-artist vs. artist) x 2 (gender: male vs. female) analysis of variance (MANOVA) was conducted using personality scores as dependent variables. The main effects for expertise level ($F(5,283)=11.64$) and gender ($F(5,283)=6.26$) were highly significant ($p=.000$), as was their interaction ($F(5,283)=4.01$, $p=.002$). Significant main effect of expertise level was found for Extraversion, Openness and Conscientiousness. As hypothesised, artists scored significantly higher in Openness ($t(289)=-6.33$; $p=.000$), significantly lower in Extraversion ($t(289)=2.07$, $p=.04$) and in Conscientiousness ($t(289)=3.19$, $p=.002$) than people in general. Further analysis showed that the interaction of gender and training was significant in Neuroticism ($F(1,287)=9.85$, $p=.002$). Scheffé test confirms that untrained females and male artists score on Neuroticism significantly higher than untrained males (the differences are significant at a $p=.02$ and $p=.000$ level, respectively) and female artists score lower than female non-artist.

Table 1. Means and standard deviations of NEO-PI-R scores by expertise level and gender

NEO-PI-R	N		E		O		A		C	
domain scale	m	SD	m	SD	m	SD	m	SD	m	SD
Non-artist	**90.2**	**26.1**	**120.9**	**25.5**	**120.2**	**19.1**	**113.9**	**18.4**	**112.4**	**23.6**
male	78.6	29.5	112.4	27.1	112.0	25.1	105.8	23.0	110.2	29.0
female	93.3	24.3	123.1	24.7	122.4	16.5	116.1	16.4	113.0	21.9
Artist	**94.2**	**27.7**	**114.5**	**23.4**	**135.0**	**18.1**	**111.5**	**18.2**	**103.0**	**23.8**
male	100.4	28.1	105.3	26.1	133.5	21.1	110.0	19.2	99.3	26.5
female	91.7	27.3	118.2	21.3	135.6	16.8	112.1	17.9	104.6	22.7
Male total	87.4	30.7	109.5	26.7	120.7	25.7	107.5	21.5	105.8	28.3
Female total	92.8	25.2	121.6	23.8	126.5	17.7	114.9	16.9	110.4	22.5
All Groups	91.5	26.6	118.7	25.0	125.1	20.0	113.1	18.3	109.3	24.0

Note: Total N=291, non-artist N=194 (153 females, 41 males), artist N=97 (69 females, 28 males). N - Neuroticism, E – Extraversion, O – Openness to Experience, A – Agreeableness, C – Conscientiousness. The statistics for non-artists and artists are given in bold.

In fact, according to Estonian NEO-PI-R norms, all male artists were classified as high scorers in Neuroticism. Somewhat surprisingly, female artists do not differ from any other group in Neuroticism and scored even lower than male artists and female in general. When the differences were examined at a facet level, male artists scored higher than female artists on every Neuroticism facet scale, except on Impulsiveness; whereas in non-artist group the trend was the opposite: females scored higher on every facet scale. Male artists scored significantly higher than untrained males on Depression (p=.002), Self-Consciousness (p=.04) and Vulnerability (p=.04).

It is evident from Figure 2 that untrained females score systematically higher than untrained males on every personality dimension, Conscientiousness being the most similar in the two groups. Women have significantly higher scores compared to men on Neuroticism, Openness and Agreeableness (all *p*s =.02). Although women score higher on Extraversion and Conscientiousness as well, these differences do not reach significance. Figure 2 reveals also that the scores of male and female artists on Openness, Agreeableness and Conscientiousness are strikingly similar.

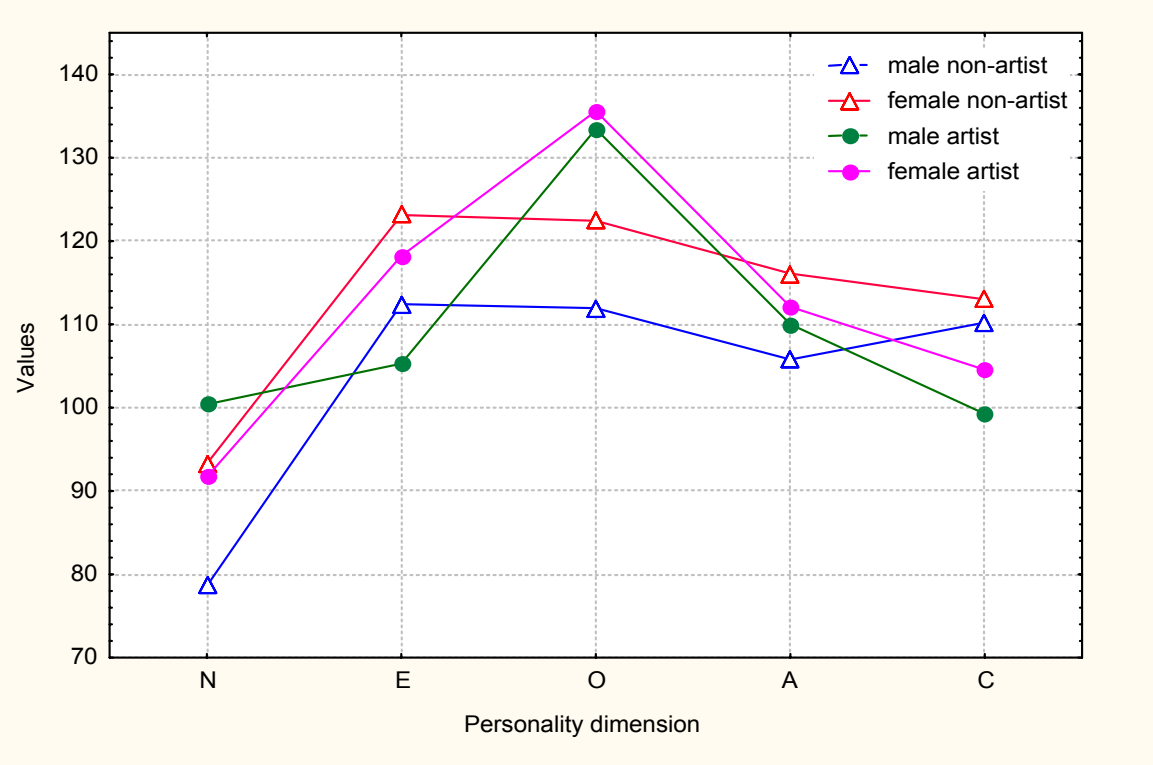

Figure 2. The NEO-PI-R means for males and females in artist and non-artist group

On Neuroticism males score higher than females and on Extraversion females score higher than males, but Scheffé test indicates that the differences are not significant.

Personality dimensions were also correlated with age, gender and training, measured by the Art Experience Scale. The scale was significantly correlated with Openness (r=.44, p=.000) and Conscientiousness (r=-.14, p=.03), gender was positively correlated with Extraversion (r=.24, p=.000), Openness (r=.13, p=.03) and Agreeableness (r=.23, p=.000). Age was negatively correlated with Neuroticism (r=-.31, p=.000) and positively with Openness (r=.15, p=.02), Agreeableness (r=.19, p=.002) and Conscientiousness (r=.23, p=.000).

These results suggest that the effects of training, gender and age should be taken into account before drawing any conclusions about the associations between personality and aesthetic preferences – the relationship may be mediated by some other variable. Especially important is to control the effects of training in relation to Openness.

Relations between figure dimensions, personality, training in art and gender

Factor scores were obtained for each figure dimension to assess each respondent's standing on these dimensions. Figure 3 demonstrates the differences in aesthetic preferences across all groups. Mean factor scores with standard deviations for male and female artists and non-artists are reported in Table 2, along with the t-test results for the main effects of expertise and gender. To test the interaction effects of gender and training, a multivariate analysis of variance (MANOVA) was carried out, with the five figure dimensions as dependent variables. The main effects of gender ($F(5,426)=16.78$, $p=.000$) and training ($F(5,426)=50.28$, $p=.000$) were highly significant. The interaction was also significant, $F(5,426)=3.91$, $p=.002$. The interaction was significant in Ruled Complex ($F(5,426)=7.61$, $p=.000$) and in Dot/Curvy ($F(5,426)=9.51$, $p=.000$) dimensions, in both cases the untrained males obtained the lowest score and untrained females had the highest score.

Table 2. Mean factor scores with standard deviations and t-values for figure dimensions across gender and expertise level

Figure dimension	Non-artist		Artist		t-value	p
	m	SD	m	SD		
Ruled Simple	**.03**	**1,01**	**-.06**	**.98**	**.92[a]**	**.357**
male	.37	1,08	.39	.94	4.71[b]	.000
female	-.05	.98	-.27	.93		
Shading	**.36**	**.87**	**-.58**	**.91**	**10.80[a]**	**.000**
male	.67	.97	-.26	1,02	2.51[b]	.013
female	.29	.83	-.73	.82		
Freehand Simple	**-.32**	**.93**	**.52**	**.89**	**-9.32[a]**	**.000**
male	-.40	.93	.42	.92	0.08[b]	.933
female	-.30	.93	.56	.88		
Ruled Complex	**-.02**	**.99**	**.03**	**1,01**	**-.54[a]**	**.588**
male	-.49	.99	.05	1,08	-2.68[b]	.007
female	.10	.96	.03	.98		
Dot/Curvy	**.18**	**1,02**	**-.28**	**.91**	**4.74[a]**	**.000**
male	-.50	.92	-.41	.86	-5.68[b]	.000
female	.35	.97	-.22	.92		

Note: Total N=434, non-artist N=267, artist N=167. [a]Difference between non-artists and artists, [b]difference between males and females. The data for artists and non-artists are in boldface.

T-test reveals that the differences between artists and non-artists (see Table 2), are especially pronounced in Shading (t(432)=10.80, p=.000) and Freehand Simple (t(432)=-9.32, p=.000) dimensions. Another t-test was conducted to estimate the differences between the mean scores of males and females on the figure dimensions. The most important finding is that males have significantly higher scores than females on the dimension of Ruled Simple (see Table 2 for details). This supports the hypothesis that men like angular and simple forms, regardless of training in art.

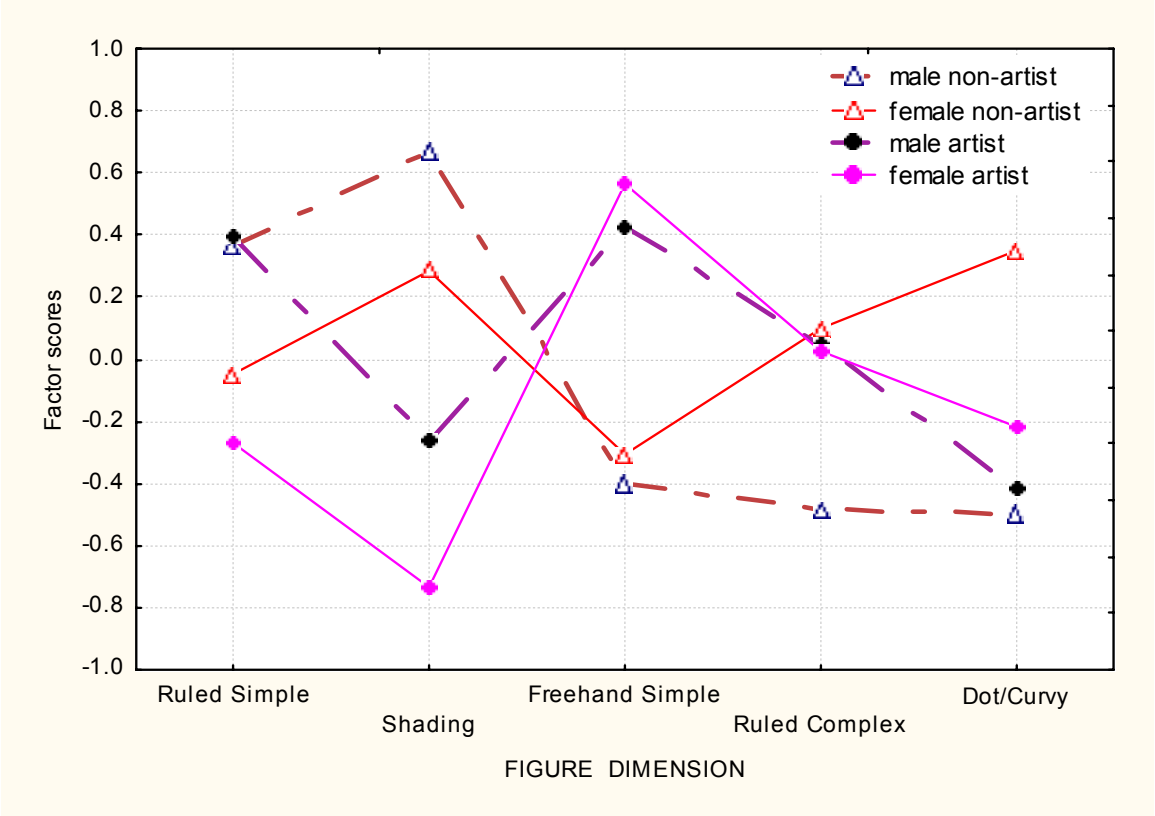

Figure 3. Mean factor scores on five figure dimensions across groups.

Next, the factor scores for figure dimensions were correlated with personality measures, separately for trained and untrained subjects. Extraversion was not correlated with any of the figure dimensions. A significant correlation between Neuroticism and shaded figures appeared in untrained subjects (r=.16, p<.05). Conscientiousness was negatively related to Freehand Simple figures (r=-.12, p<.05).

The correlations between the figure dimensions and Openness, Agreeableness, Art Experience Scale, age and gender are presented in Table 3. Across all groups, significant correlations emerge between Openness and Freehand Simple figures and between Agreeableness and Dot/Curvy figures. Open artists tend to prefer simple figures, whether Ruled (r=.20) or Freehand (r=.17), and Dotted figures (r=.34). The Dot/Curvy mean scores are actually quite low in artists (see Table 2), but this implies that those artists, who like dotted figures, have also very high Openness. Ruled Complex dimension is the only figure dimension without any connections to the personality traits. The Art Experience Scale shows highest correlations with Shading (r= -.43) and with Freehand Simple (r=.49) figures. Note that the Openness correlations show the same trend, although the correlations are lower.

Table 3. Pearson correlation coefficients between the figure dimensions and NEO-PI-R Openness, Agreeableness, the Art Experience Scale, age and gender

NEO-PI-R domain scale	Ruled Simple	Shading	Freehand Simple	Ruled Complex	Dot/ Curvy
Openness	.04	-.19**	.37***	.09	.05
Non-artist	-.00	.01	.28***	.09	.08
Artist	.20*	-.09	.17*	.05	.34***
Agreeableness	.09	.06	.05	.06	.30***
Non-artist	.08	.02	.05	.03	.32***
Artist	.10	.07	.16	.13	.23*
Art Experience Scale[a]	.00	-.43***	.49***	.14*	-.20**
Age[a]	.13*	-.06	.02	.07	.05
Gender[a]	-.26***	-.10	.04	.16*	.24***

Note: Total sample N=279, non-artist N=184, artist N=95. [a]N=250; *p<.05, **p<.01, ***p<.001.

In order to specify these results, separate stepwise multiple regression analyses were performed for the five figure dimensions. When Openness, gender and age were entered as predictor variables of Ruled Simple figures, gender (beta=-.24, p=.000) and age (beta=.15, p=.009) described together 9% of the variability in Ruled Simple dimension.

Into the second model, Openness and the Art Experience Scale (AES) were entered as predictors of Shading figure dimension. The AES was the only significant predictor (beta=-.43, p=.000) and described 18% of the variability of the Shading dimension. Dimension of Freehand Simple figures was predicted both by the AES (beta=.40, p=.000) and by Openness (beta=.21, p=.000), accounting for 27.8% of the variance. The AES and gender were entered into the fourth model as predictors of Ruled Complex and only gender appeared as significant predictor (beta=.15, p=.002), describing a minor 3% of the RC variance. Three independent predictors – gender (beta=.16, p=.007), the AES (beta=-.24, p=.000) and most of all Agreeableness (beta=.25, p=.000) described together 17.3% of the Dot/Curvy variability.

Table 3 demonstrates different patterns of associations for artists and non-artists in two dimensions – Ruled Simple and Dot/Curvy. Therefore, stepwise multiple regression was conducted for artists separately. Gender, age and Openness were included into the model and regressed onto the RS dimension. Gender (beta=-.36, p=.000) and Openness (beta=.22, p=.03) explained 16.9% of the RS variability. This suggests that male artists who prefer these figures tend to have high Openness.

When Openness, the AES score and gender were entered as predictors of Dot/Curvy dimension, the Openness was the only significant predictor (beta=.34, p=.002), accounting for 11% of the Dot/Curvy variance. Agreeableness was added (beta=.23, p=.03) and together with Openness (beta=.30, p=.006), they predicted 16.3% of the Dot dimension variability. Those artists, who obtained high scores on Openness and on Agreeableness, are inclined to like dotted figures. The analysis altogether confirms that Openness has a rather small role in preferences for figure dimensions. Only one significant effect of Openness appeared, showing that Openness has an independent contribution to the preference of Freehand Simple drawings.

Discussion

Personality profile of the artists

A characteristic pattern of personality dimensions was found among artists. Furthermore, the profile of male and female artists' scores on the five personality dimensions is more similar to each other than to males and females in general. This finding is concordant with Amos' (1978) conclusion and indicates that artists have specific personality structure. Typically, as the present study shows, artists have high Openness, low Extraversion and Conscientiousness. In addition, significant differences emerged *within* the artist group as well: the results suggest that male artists are more 'deviant' with respect to people in general than female artists, who in fact differed from the general group only on Openness. These results are concordant with the conclusions of Getzels & Csikszentmihalyi (1976), Götz & Götz (1979), Eysenck & Castle (1970a).

According to the description of McCrae and Costa (1997), open persons are aesthetically reactive, value intellectual matters, have wide range of interests and are also non-conforming. To probe deeper into the personality structure of artists, it is evident that openness to ideas, values and fantasy are one of the core aspects of artist personality as is the 'willingness to consider new, perhaps unconventional ideas' (Costa & McCrae, 1992).

One of the findings of the present study was also the high Neuroticism of male artists, specifically, they had very high depression, high vulnerability and self-consciousness compared to the men in general. This pattern of personality aspects means that male artists are generally emotionally instable, they are prone to stress and guilt, become easily discouraged and hopeless, especially when rejected by others. Studies employing very different methods have showed similar results in creative and performing artists (Götz & Götz, 1979; Roubertoux, 1970; Dudek & Marchand, 1983; Marchant-Haycox & Wilson, 1992). Costa, Terracciano and McCrae (2001) tested the hypothesis whether the higher Neuroticism in women is mediated by higher Openness to Feelings, there was indeed a slight covariate effect of the Feelings subscale. That suggests that the high Neuroticism among male artists might be at least partly explainable by their high emotional sensitivity.

Relationship between personality traits, training in art and aesthetic preferences

As expected, the figures of the Welsh Figure Preference Test grouped together according to their formal properties. Furthermore, the five figure dimensions applied to artists and non-artists equally well. This demonstrates that untrained subjects are able to base their preferences on the structural properties of the figures when forced to do so (Hekkert & van Wieringen, 1996b).

It should be emphasised that although the five dimensions were highly similar, the two other dimensions, that were not included in the analysis, showed substantial differences in their content. For example, the dimension of Black figures was prominent in untrained subjects, whereas in trained subjects the dimension was rather weak. Many designs belonging to this factor differed from the figures of Ruled Simple only by the sharp contrast between figure and ground; that is, the figure was the same except for the black background. Art students regarded these high-contrast figures as part of the Ruled Simple dimension. This indicates that art students are indeed evaluating the figures according to the structural properties. In this case, the shape was the defining feature to artists, but the contrast of black and white was the defining feature to non-artists. That finding is in agreement with several studies, which have demonstrated that experts in art base their preferences more on the structural properties of the artworks than on content or colours (Winston & Cupchik, 1992; Nodine, Locher & Krupinski, 1993). While the present study does not have the pretension to generalise obtained 'laws of preference' to works of art, it is still noteworthy that the findings are in agreement between studies using different types of stimuli.

With respect to the figure preferences, one of the most interesting findings is the pattern of preferences in two figure dimensions: freehand simple drawings and shaded drawings. Artists like simple and freehand figures and dislike shaded figures, whereas the untrained subjects show exactly the opposite pattern of preferences. The overall preference 'curves' of trained males and females were very similar to each other. In contrast, the preferences of untrained males and females were quite different, agreement was only reached on liking of the shaded figures and disliking freehand simple figures.

Contrary to the hypothesis and the theoretical standpoint of Barron and Welsh (1952), the results show that artists in general like simple figures. The result is concordant with the finding of Eysenck (1972a). This tendency to prefer simplicity to complexity was even more prominent in male artists, who liked simple forms, whether ruled or freehand. Men in general liked also simple and ruled figures, but their general pattern of preferences is very different from male artists.

Based on previous research with paintings, untrained subjects were expected to like more 'realistic' figures. This hypothesis was confirmed - indeed, both males and females without formal training in art liked figures that suggested three dimensionality and depicted certain objects. In the light of the finding that ruled, abstract and complex figures were not popular among any of the tested groups, the preference for shaded figures would actually confirm the theory of Martindale, who postulated that meaningfulness is a strong determinant of preferences (Martindale and colleagues, 1988, 1990). The hypothesis that women like figures with soft lines was confirmed, but only when we look at the preferences of untrained women.

There are indications that personality factors are involved in the aesthetic experience. The result that open individuals prefer relatively simple freehand drawings to complex drawings is not consistent with several other studies, which have shown that preference for paintings, designs or even sculptures are congruent with the personality traits of the viewer (Tobacyk, Bailey & Myers, 1979; Alexander & Marks, 1983; Moffett & Dreger, 1975). In aesthetic preference studies, Openness is the personality dimension that is related to liking of abstract art (Furnham and colleagues, 1997, 2001a, 2001b, 2004). Furthermore, the correlations between personality dimensions and figure dimensions indicate that while the mean score for freehand simple drawings is quite low in the untrained subjects, then the more open individuals prefer similar designs that open artists prefer.

Agreeableness is the dimension that reflects a person's tendency to experience positive emotions. When confronted with emotional stimuli, emotional people react with higher level of emotional arousal (Costa & McCrae, 1992). It is possible that some drawings of the WFPT contain such emotionally arousing elements. The results of this

study show that highly agreeable persons tend to prefer certain kind of stimuli. The association between high Agreeableness and Dot/Curvy figure dimension remained significant even after gender was entered into the model, suggesting that altruistic and emphatic persons tend to like curvy and dotted figures, regardless of training in art.

In view of the wide differences in taste that are known to distinguish human beings, it is rather remarkable that significant differences can be obtained even with relatively small groups of subjects (Berlyne, 1971). Contrary to a popular belief that there are wide differences in taste, the evidence suggests differently. This study shows that the preferences of artists and non-artists, males and females could be diverse and depend on common factors and principles at the same time. Moreover, the preferences are related to certain personality traits, which underlie the aesthetic preferences of both trained and untrained subjects.

This research has resulted in evidence confirming the influence of gender, expertise level and certain personality traits on aesthetic preferences. However, the role of Openness was in the present study less prominent than previous studies using real works of art have shown. Personality traits combined with training in art and gender were significant contributors to aesthetic preferences.

Acknowledgments

I would like to thank the people whose help, patience, encouragement and love have contributed to the present study.

I am indebted to my supervisor Marika Rauk and to prof. Jüri Allik for giving direction to my sometimes obscure ideas.

I will always be grateful to my family for their support and help.

But my warmest thanks goes to Jaan Kangilaski, for being there for me.

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Appendix A

Art Experience Scale

Lõpuks palume teil vastata mõnele küsimusele, mis puudutavad teie eelnevaid kokkupuuteid kujutava kunstiga.

1. Kujutav kunst huvitab mind ❑ Jah ❑ Pigem jah ❑ Pigem ei ❑ Ei

2. Tegelen vabal ajal ise kujutava kunstiga (joonistamise, maalimise, keraamika vms)

❑ Jah ❑ Ei

3. Käin kunstinäitustel

❑ umbes 2 korda kuus (või rohkem) ❑ 2-3 korda poolaastas
❑ 2-3 korda aastas ❑ ei käi kunstinäitustel

4. Keskkoolis õppisin kunstiajalugu ❑ Jah ❑ Ei

5. Olen ülikoolis kuulanud kunstiajaloo loenguid

❑ 3 või rohkem ainekursust ❑ 1-2 ainekursust ❑ mitte ühtegi

6. Olen käinud joonistamise või maali kursustel ❑ Jah ❑ Ei

7. Olen õppinud lastekunstikoolis või keskkoolis kunstiklassis

❑ Jah, ... aastat ❑ Ei

8. Olen õppinud kõrgemas kunstikoolis (Tallinna Kunstiülikool / ERKI / EKA, Tartu Kõrgem Kunstikool)

❑ Jah, ... aastat ❑ Ei

Appendix B

Seven-factor structure of the Welsh Figure Preference Test items.

Item no.	Ruled Simple	Shading	Freehand Simple	Ruled Complex	Dot/Curvy	Black	Freehand Complex
W1	**0.35**	-0.04	0.04	**0.34**	-0.04	-0.14	-0.02
W3	0.27	-0.12	0.26	0.03	0.02	-0.02	-0.09
W4	0.25	-0.10	0.19	0.12	0.12	-0.08	-0.16
W9	0.24	0.01	0.10	0.08	0.17	-0.00	-0.01
W16	**0.36**	-0.12	0.18	0.05	0.07	0.11	-0.22
W18	0.18	-0.03	0.12	0.16	0.02	0.09	0.09
W19	**0.40**	0.01	0.08	-0.11	0.28	-0.08	-0.12
W27	**0.50**	-0.15	0.18	-0.18	0.07	-0.09	-0.11
W28	0.23	0.02	0.02	0.22	0.22	0.04	-0.05
W33	**0.35**	0.25	-0.07	0.14	-0.08	0.02	0.01
W34	**0.34**	0.00	-0.02	0.27	0.16	0.04	-0.04
W37	**0.37**	0.11	-0.13	0.23	0.02	0.03	0.14
W42	**0.36**	0.24	-0.28	0.05	**0.30**	0.02	-0.00
W46	**0.38**	-0.02	-0.11	0.22	0.08	0.28	0.05
W48	**0.46**	0.09	-0.16	0.02	**0.32**	0.02	0.04
W62	0.29	0.05	-0.20	0.19	0.26	0.11	-0.06
W65	**0.44**	-0.11	0.15	0.10	0.11	0.02	-0.06
W67	**0.36**	0.25	-0.01	0.17	-0.07	0.11	0.17
W74	**0.49**	0.04	-0.02	0.13	0.17	0.07	0.03
W82	**0.32**	-0.01	-0.14	0.12	0.17	**0.31**	-0.13
W91	0.29	-0.09	0.27	0.22	-0.16	0.11	0.19
W94	**0.42**	-0.07	0.07	-0.02	-0.07	**0.36**	0.19
W95	**0.52**	0.26	-0.12	0.01	0.12	0.02	-0.05
W97	**0.51**	-0.00	0.07	0.19	0.08	-0.00	0.15
W98	**0.65**	-0.02	0.04	0.07	0.06	0.01	0.01
W104	**0.52**	-0.14	0.26	-0.09	0.17	-0.04	-0.00
W106	**0.39**	0.12	**0.34**	0.23	0.05	0.00	-0.09
W107	**0.36**	**0.32**	0.03	0.18	-0.08	0.15	-0.18
W114	**0.60**	-0.03	0.03	-0.05	0.05	0.13	0.09
W115	**0.40**	-0.02	0.05	0.23	-0.02	0.28	0.14
W116	**0.34**	0.18	0.21	-0.10	**0.30**	0.15	0.14
W118	**0.48**	0.19	0.03	0.16	-0.08	0.16	0.06
W120	**0.55**	-0.11	0.06	0.16	0.02	0.01	0.04
W122	**0.51**	0.00	-0.04	0.14	0.25	0.12	-0.10
W125	**0.34**	0.20	0.17	0.28	-0.06	-0.01	-0.07
W129	**0.43**	-0.20	**0.30**	-0.06	0.25	0.03	-0.00
W134	**0.58**	-0.02	0.12	-0.07	0.05	0.24	0.03
W136	**0.41**	**0.35**	-0.11	0.17	0.09	0.00	-0.09
W137	**0.66**	-0.01	0.07	0.07	0.01	0.12	-0.08
W138	**0.40**	-0.08	0.21	0.15	0.23	0.04	-0.23
W139	**0.62**	-0.03	-0.02	0.06	0.09	0.14	0.06
W147	**0.47**	-0.19	**0.32**	-0.08	0.22	0.00	0.05
W151	**0.42**	-0.03	0.21	0.22	-0.01	0.05	0.01

W152	**0.33**	0.15	0.06	**0.32**	0.03	-0.07	0.29
W153	**0.62**	0.01	0.07	-0.03	0.17	0.07	0.14
W155	**0.32**	0.24	0.24	0.04	0.04	0.02	0.21
W156	**0.44**	0.01	0.06	0.25	0.21	0.03	0.04
W157	**0.54**	0.00	-0.06	0.03	0.01	**0.31**	0.17
W160	**0.44**	-0.06	0.17	0.19	0.16	0.21	0.04
W161	**0.45**	0.11	0.00	**0.34**	0.11	-0.09	-0.04
W163	**0.45**	0.03	0.07	0.04	-0.02	0.10	0.22
W164	**0.46**	0.24	-0.08	0.27	-0.06	0.06	0.16
W166	**0.54**	-0.02	0.11	0.00	0.03	0.10	0.04
W169	**0.50**	0.18	-0.14	-0.02	0.11	0.19	0.05
W171	**0.68**	0.01	0.11	0.09	0.07	0.01	-0.01
W173	**0.56**	-0.07	0.23	-0.09	0.29	-0.07	-0.02
W178	**0.47**	**0.31**	-0.05	0.20	0.03	0.10	-0.03
W182	**0.45**	-0.01	0.09	0.01	0.03	**0.44**	-0.09
W185	**0.35**	0.02	**0.32**	-0.09	**0.35**	0.04	-0.06
W187	**0.53**	0.02	-0.03	**0.30**	0.00	-0.03	0.13
W193	**0.59**	0.27	-0.11	0.13	0.06	0.02	-0.03
W200	**0.63**	-0.02	-0.04	0.12	0.04	0.07	-0.03
W211	**0.45**	0.04	0.07	-0.03	0.05	**0.42**	-0.09
W212	**0.43**	-0.16	**0.34**	0.26	-0.04	0.11	-0.13
W217	**0.53**	0.05	-0.07	0.03	0.21	-0.05	0.09
W218	**0.57**	0.25	-0.05	0.24	-0.05	0.02	0.09
W221	**0.57**	-0.09	0.16	-0.05	0.00	0.11	0.07
W220	**0.34**	0.06	-0.02	0.28	**0.34**	0.09	-0.13
W223	**0.55**	0.03	0.09	-0.01	0.10	0.28	0.15
W225	**0.73**	-0.08	0.06	-0.05	0.04	0.13	-0.14
W232	**0.38**	0.00	0.19	**0.35**	0.17	0.12	-0.21
W238	**0.61**	-0.01	-0.03	0.14	0.01	0.22	0.08
W243	**0.43**	0.27	-0.03	0.19	-0.01	0.10	0.17
W246	**0.46**	-0.05	0.24	0.08	0.16	0.17	-0.01
W249	**0.61**	-0.20	0.17	-0.01	-0.00	**0.30**	-0.05
W250	**0.56**	0.19	-0.06	0.10	-0.05	0.12	0.16
W251	**0.39**	-0.05	0.25	**0.30**	0.21	0.03	-0.14
W256	**0.41**	0.00	**0.34**	0.08	-0.02	-0.05	0.17
W257	**0.51**	0.05	0.01	**0.34**	0.06	-0.04	0.03
W258	0.26	0.15	0.00	0.23	0.24	-0.06	0.17
W260	**0.60**	0.25	-0.06	0.16	-0.02	0.03	0.08
W267	**0.58**	-0.09	0.26	0.10	0.01	0.12	-0.13
W268	**0.56**	-0.05	-0.06	0.06	0.08	0.23	0.06
W270	**0.42**	-0.02	0.20	0.17	0.24	-0.00	0.03
W275	**0.59**	0.07	0.03	0.24	-0.05	-0.07	0.02
W276	**0.51**	-0.18	**0.40**	0.13	-0.05	0.02	-0.05
W277	**0.51**	0.21	-0.09	0.13	-0.00	0.15	0.06
W282	**0.65**	-0.14	0.19	-0.02	0.00	0.19	-0.16
W287	**0.58**	-0.04	0.09	0.10	0.05	0.04	-0.02
W288	**0.60**	-0.10	0.23	0.06	-0.00	0.07	0.00
W289	**0.50**	-0.13	0.10	0.07	-0.00	**0.33**	0.07
W291	**0.70**	-0.02	0.10	-0.03	0.04	0.26	-0.06
W295	**0.61**	0.07	0.11	0.02	0.20	0.02	0.09
W297	**0.51**	-0.02	0.11	-0.10	0.06	**0.44**	0.08
W298	**0.56**	0.21	-0.11	0.09	0.06	0.07	0.08
W300	**0.54**	0.21	-0.05	0.10	0.07	0.15	0.08

W305	**0.43**	0.07	-0.01	0.29	0.23	0.15	-0.12
W306	**0.61**	0.17	-0.07	0.16	0.01	0.01	0.06
W310	**0.48**	0.10	-0.11	0.09	0.28	0.06	-0.11
W313	**0.32**	0.17	0.10	0.28	0.18	-0.12	0.16
W316	**0.56**	-0.10	0.05	-0.00	0.02	**0.44**	-0.03
W318	**0.55**	-0.03	0.21	0.17	0.10	0.03	0.06
W321	**0.46**	0.16	-0.10	**0.36**	0.11	-0.10	0.15
W323	**0.52**	0.08	0.06	-0.07	**0.46**	-0.08	0.09
W327	**0.61**	-0.15	0.14	-0.09	0.08	**0.31**	-0.03
W329	**0.59**	-0.05	-0.03	0.08	0.15	-0.06	0.08
W331	**0.55**	-0.08	0.09	-0.09	0.06	**0.33**	0.12
W332	**0.60**	0.04	0.21	0.10	0.02	0.00	0.07
W333	**0.52**	-0.08	0.11	-0.05	**0.41**	-0.12	0.00
W335	**0.52**	-0.14	0.25	0.09	0.02	0.15	-0.11
W337	**0.38**	-0.15	**0.34**	0.28	0.11	-0.02	-0.19
W339	**0.49**	-0.01	**0.36**	0.17	0.05	0.01	-0.04
W342	**0.52**	-0.05	0.16	-0.03	**0.35**	-0.03	0.10
W347	**0.39**	0.12	-0.16	**0.30**	0.27	0.06	0.09
W348	**0.61**	-0.06	0.01	0.02	0.06	0.04	0.09
W350	**0.54**	0.00	0.23	0.18	0.11	-0.03	-0.04
W351	**0.56**	0.01	0.06	-0.06	**0.42**	-0.12	0.02
W352	**0.70**	-0.03	-0.00	0.12	0.11	0.02	0.05
W353	**0.52**	0.24	-0.02	0.25	-0.06	0.01	-0.01
W355	**0.47**	-0.18	0.28	-0.01	0.29	-0.15	0.06
W356	**0.32**	0.28	0.27	-0.10	0.02	-0.02	0.26
W386	**0.65**	-0.03	0.18	0.07	0.04	0.06	0.02
W392	**0.44**	-0.03	0.19	**0.36**	-0.17	0.08	0.15
W395	**0.50**	0.08	-0.04	0.22	0.13	-0.02	0.15
W398	**0.32**	0.22	-0.11	0.25	0.27	0.07	0.08
W7	-0.12	**0.50**	0.14	-0.04	0.04	-0.10	0.06
W10	0.22	0.24	-0.16	0.08	0.27	0.02	0.07
W13	0.20	0.27	-0.10	-0.00	0.04	0.22	0.01
W14	-0.08	0.29	0.17	-0.13	0.05	-0.12	0.23
W21	-0.09	**0.37**	0.21	0.07	0.11	0.01	0.01
W29	0.01	**0.52**	0.12	0.04	-0.08	0.10	-0.08
W30	-0.02	**0.32**	0.03	-0.04	0.19	-0.01	0.22
W40	-0.10	**0.59**	0.16	0.06	-0.02	0.10	0.21
W41	-0.17	0.22	0.12	0.11	0.22	0.21	0.18
W44	0.05	**0.66**	-0.04	-0.03	-0.06	-0.01	0.03
W55	-0.05	**0.41**	-0.16	0.05	**0.39**	0.12	0.13
W58	0.05	**0.53**	0.01	0.07	0.07	0.03	0.10
W60	-0.07	**0.59**	0.02	0.07	0.24	-0.04	0.07
W70	0.05	**0.70**	0.02	-0.04	0.03	-0.02	0.05
W81	0.03	**0.53**	0.29	0.01	0.01	-0.08	-0.10
W83	-0.12	**0.54**	-0.04	0.15	**0.32**	-0.03	-0.06
W85	0.08	**0.57**	0.11	0.05	0.04	0.00	0.15
W86	0.06	**0.65**	-0.06	0.04	0.19	0.01	0.06
W87	-0.02	**0.43**	0.08	0.13	0.22	0.05	-0.03
W93	-0.13	**0.39**	**0.35**	0.20	-0.10	-0.10	-0.03
W100	0.06	**0.65**	0.01	-0.08	0.00	-0.05	0.00
W103	-0.14	**0.56**	0.16	0.08	0.01	-0.04	0.23
W108	-0.07	**0.33**	-0.05	0.27	0.29	0.01	0.21
W112	-0.09	**0.44**	-0.02	0.19	**0.33**	0.17	0.11

W117	-0.14	**0.60**	0.06	0.12	-0.01	0.04	-0.14
W119	-0.00	**0.46**	0.10	0.01	**0.38**	-0.09	0.04
W124	-0.15	**0.48**	0.17	0.22	0.16	-0.24	0.08
W127	0.03	**0.48**	0.03	-0.07	0.17	-0.02	**0.35**
W128	0.11	**0.54**	0.04	-0.00	0.05	0.10	0.10
W130	-0.07	**0.36**	**0.32**	0.25	0.09	-0.10	0.15
W140	0.09	**0.68**	-0.05	0.05	0.17	-0.07	-0.13
W142	0.04	**0.48**	0.07	-0.00	**0.36**	-0.07	0.12
W146	0.17	**0.56**	-0.02	0.04	**0.33**	-0.08	0.06
W148	0.03	**0.71**	-0.06	-0.02	0.08	-0.02	0.07
W159	0.15	**0.71**	0.00	0.00	0.07	-0.07	0.02
W170	0.06	**0.52**	0.20	-0.01	**0.32**	-0.05	0.08
W189	0.13	**0.41**	0.06	-0.00	0.09	0.07	**0.39**
W192	0.07	**0.55**	0.06	-0.04	0.09	0.14	0.29
W202	0.06	**0.39**	0.19	0.22	0.28	0.03	-0.11
W215	0.01	**0.46**	0.04	0.04	**0.31**	-0.06	0.26
W219	0.11	**0.51**	0.11	-0.03	0.11	0.01	0.28
W233	0.09	**0.31**	**0.30**	0.10	0.09	-0.02	-0.05
W234	0.02	**0.42**	0.20	0.18	0.19	0.08	0.16
W235	**0.33**	**0.39**	-0.07	0.19	0.11	0.05	0.12
W236	-0.08	**0.40**	0.04	0.13	0.25	0.13	0.03
W241	0.08	**0.50**	-0.00	0.11	0.25	0.06	0.15
W245	0.13	**0.60**	-0.02	-0.03	**0.30**	-0.06	0.01
W247	0.11	**0.39**	-0.11	0.15	**0.31**	0.17	0.18
W252	0.02	**0.66**	0.00	0.05	0.02	0.01	0.21
W253	-0.09	**0.64**	0.01	0.13	0.04	0.10	0.11
W273	0.16	**0.52**	0.21	0.09	-0.01	0.13	0.03
W283	-0.05	**0.55**	0.26	-0.02	0.06	-0.03	0.14
W284	0.16	**0.32**	0.06	**0.31**	0.24	-0.06	-0.00
W292	0.02	**0.52**	-0.00	0.20	**0.31**	-0.07	0.19
W296	0.14	**0.38**	-0.03	0.11	0.28	-0.04	**0.37**
W309	-0.10	**0.55**	0.07	0.07	0.09	0.01	**0.30**
W315	-0.22	**0.56**	0.15	0.12	0.04	0.03	0.04
W319	0.11	**0.34**	0.03	0.17	0.18	-0.03	**0.32**
W322	-0.07	**0.56**	0.17	0.20	0.10	-0.02	-0.05
W324	0.01	**0.46**	-0.04	0.09	**0.40**	0.00	0.25
W325	0.00	**0.64**	0.10	0.09	0.12	-0.02	-0.01
W334	0.04	**0.50**	0.04	0.06	0.06	-0.00	**0.36**
W340	0.10	**0.32**	0.17	0.06	0.15	-0.02	0.01
W341	0.14	**0.40**	0.14	0.05	**0.36**	-0.11	0.04
W345	0.10	**0.67**	-0.06	-0.02	0.03	-0.06	0.06
W354	-0.13	**0.52**	0.19	0.23	0.16	-0.14	0.01
W357	-0.10	**0.51**	**0.32**	0.21	-0.01	0.04	0.03
W358	-0.05	**0.58**	-0.06	0.18	0.23	0.03	-0.09
W381	0.01	**0.53**	0.18	0.05	0.25	-0.10	0.08
W383	-0.17	**0.37**	**0.37**	0.19	0.06	-0.09	0.06
W384	0.06	**0.38**	-0.01	0.26	**0.30**	0.06	0.03
W397	0.18	**0.39**	-0.03	0.28	0.28	0.04	-0.12
W399	-0.16	**0.41**	**0.36**	0.24	-0.01	-0.02	-0.09
W11	0.17	-0.28	**0.43**	0.18	-0.12	0.12	-0.03
W12	-0.08	0.10	0.21	0.16	0.06	-0.07	0.17
W25	0.29	-0.14	**0.30**	-0.07	0.08	-0.10	0.07
W26	-0.06	0.03	**0.48**	0.08	-0.08	0.08	-0.02

W31	-0.04	0.14	**0.35**	0.04	0.02	-0.13	0.10
W32	0.23	**0.33**	**-0.38**	0.09	0.21	0.03	-0.03
W35	0.01	0.18	**0.32**	0.18	-0.04	0.09	-0.05
W38	0.12	0.01	**0.47**	-0.14	0.17	-0.07	0.16
W45	-0.11	0.05	**0.36**	-0.01	0.25	-0.02	**0.30**
W47	0.07	-0.02	**0.59**	-0.17	-0.11	-0.02	0.20
W53	0.08	0.02	**0.43**	-0.09	0.14	0.05	0.23
W54	0.15	0.13	**0.52**	-0.05	-0.14	0.08	0.07
W57	0.29	0.06	**0.33**	-0.01	**0.32**	-0.18	0.01
W61	0.15	0.00	**0.57**	0.02	-0.17	0.15	-0.07
W72	0.13	0.12	**0.41**	0.05	0.19	0.00	-0.11
W76	0.12	0.09	**0.54**	-0.14	-0.09	-0.05	0.22
W77	0.22	-0.17	**0.49**	0.10	0.08	-0.10	-0.12
W78	0.13	0.09	0.26	0.14	0.25	0.09	0.18
W88	**0.31**	-0.28	**0.39**	-0.04	0.13	0.02	-0.02
W90	0.18	0.06	**0.44**	0.04	0.21	-0.02	0.07
W99	-0.13	0.20	**0.40**	0.24	0.16	0.04	0.14
W101	0.29	0.08	**-0.35**	0.25	0.26	0.20	0.01
W109	0.15	0.24	**0.33**	0.00	**0.32**	-0.04	0.18
W110	0.10	-0.02	**0.44**	0.05	0.15	0.11	0.26
W121	0.10	0.21	**0.47**	-0.15	0.01	0.26	0.06
W141	-0.25	0.10	**0.39**	0.23	0.01	0.21	0.08
W150	-0.01	0.06	**0.51**	0.23	0.10	0.23	-0.01
W154	-0.13	0.29	**0.45**	0.13	0.03	-0.06	-0.03
W165	-0.15	0.12	**0.53**	0.21	-0.11	0.07	-0.06
W176	0.14	-0.03	**0.44**	0.01	0.13	-0.01	0.27
W181	0.15	0.01	**0.46**	0.11	0.08	-0.11	0.28
W203	0.26	-0.01	**0.46**	-0.16	0.06	0.04	0.16
W224	-0.05	0.15	**0.48**	0.14	0.08	0.26	0.04
W237	-0.11	0.29	**0.46**	0.10	0.08	-0.08	0.11
W240	-0.12	**0.37**	**0.44**	0.13	-0.04	0.06	-0.01
W255	-0.03	0.11	**0.62**	0.10	0.06	0.01	0.03
W271	-0.09	0.21	**0.44**	0.02	-0.01	0.08	-0.01
W285	0.13	0.10	**0.62**	-0.09	0.04	0.03	0.06
W293	0.23	-0.25	**0.36**	0.02	-0.07	0.13	-0.01
W308	0.14	-0.02	**0.62**	-0.15	-0.03	0.00	0.21
W314	0.23	0.07	**0.62**	-0.05	-0.06	0.03	0.14
W326	0.25	0.07	**0.59**	-0.09	-0.05	0.02	0.14
W343	0.06	0.16	**0.62**	-0.03	-0.02	0.08	0.20
W344	-0.03	0.29	**0.37**	0.25	0.22	0.02	0.10
W346	0.18	0.08	**0.59**	-0.04	-0.04	0.14	0.01
W359	0.15	0.17	**0.52**	-0.08	0.06	0.13	0.06
W382	0.25	0.00	**0.58**	-0.02	-0.00	0.14	0.00
W385	0.15	-0.06	**0.64**	0.02	-0.08	-0.00	0.13
W387	-0.16	**0.31**	**0.42**	0.29	-0.01	-0.01	0.15
W390	**0.33**	0.12	**0.50**	-0.10	0.00	0.08	0.23
W391	-0.03	0.24	**0.34**	0.24	0.18	0.08	0.02
W396	-0.11	0.15	**0.47**	0.17	-0.10	0.19	-0.13
W8	0.04	-0.00	0.08	0.20	0.18	0.15	-0.02
W15	-0.04	-0.04	0.01	**0.51**	0.01	0.02	-0.02
W17	0.05	0.22	-0.13	0.27	0.23	-0.03	-0.06
W22	0.24	0.16	0.06	0.26	0.07	-0.09	0.01
W23	-0.02	0.24	-0.08	**0.42**	0.08	0.01	0.14

W24	0.17	-0.01	0.13	**0.30**	0.29	0.08	-0.17
W49	0.24	-0.02	0.19	**0.44**	0.03	-0.03	-0.07
W56	0.11	0.13	0.14	**0.35**	0.23	-0.07	-0.05
W68	0.16	0.21	-0.19	**0.52**	0.10	-0.04	0.12
W71	0.00	0.08	-0.07	**0.58**	0.03	0.03	0.05
W80	0.28	-0.02	0.04	**0.30**	-0.00	0.05	-0.11
W84	**0.42**	0.14	-0.08	**0.44**	0.06	-0.00	0.07
W92	**0.34**	0.14	-0.10	**0.39**	0.06	-0.07	0.18
W126	0.17	-0.03	0.20	**0.34**	0.05	0.22	0.04
W135	**0.34**	0.14	0.01	**0.39**	0.10	0.01	0.03
W143	0.29	**0.30**	-0.10	**0.37**	0.07	0.02	-0.10
W145	**0.31**	0.17	0.05	**0.40**	-0.06	-0.13	0.10
W149	0.12	0.05	-0.04	**0.50**	0.17	0.04	-0.08
W168	0.07	0.20	0.11	**0.62**	0.08	-0.06	0.08
W172	0.26	-0.09	**0.30**	**0.52**	-0.03	-0.05	0.08
W175	0.22	-0.09	0.21	**0.48**	0.18	0.16	-0.20
W195	0.23	0.12	-0.02	**0.54**	0.16	-0.06	0.07
W197	0.16	**0.31**	0.12	**0.35**	0.14	0.09	0.20
W199	0.17	0.18	-0.06	**0.55**	0.08	-0.01	0.04
W201	0.17	0.16	**0.34**	**0.40**	-0.02	-0.00	-0.15
W205	0.20	**0.38**	-0.11	**0.49**	0.05	0.05	-0.03
W206	0.19	0.05	0.05	**0.31**	0.02	**0.30**	0.25
W209	0.10	0.09	0.14	**0.55**	-0.05	-0.03	0.16
W216	**0.37**	0.24	-0.07	**0.43**	-0.11	0.03	-0.02
W214	0.29	-0.04	0.22	**0.34**	0.27	0.21	-0.16
W222	0.03	-0.07	0.23	**0.40**	**0.36**	0.10	0.00
W231	**0.40**	0.04	0.10	**0.46**	-0.02	0.08	0.22
W239	**0.30**	0.07	0.09	**0.40**	-0.08	0.01	**0.30**
W242	0.23	0.12	0.17	**0.51**	-0.05	-0.04	0.24
W248	-0.05	0.29	0.05	**0.39**	0.15	0.03	0.25
W254	**0.41**	0.10	-0.05	**0.51**	-0.06	0.02	0.13
W259	0.25	0.08	0.08	**0.59**	0.05	0.09	-0.05
W279	0.16	0.02	0.17	0.24	0.19	0.17	-0.03
W299	0.12	0.01	0.02	**0.58**	0.11	0.06	0.03
W303	0.17	0.08	0.04	**0.45**	0.08	0.24	0.22
W320	**0.30**	0.21	-0.08	**0.37**	0.10	-0.05	0.17
W338	0.06	0.03	-0.10	**0.59**	0.18	0.12	0.05
W394	-0.03	**0.32**	-0.09	**0.43**	**0.33**	0.14	0.09
W2	-0.00	0.24	-0.03	0.04	**0.31**	-0.10	-0.01
W6	0.05	0.25	-0.20	-0.08	**0.42**	0.04	0.01
W43	0.07	0.24	0.01	0.05	**0.39**	-0.05	0.12
W64	0.29	0.10	-0.03	0.26	**0.38**	-0.05	-0.05
W66	0.01	**0.33**	0.01	0.23	**0.39**	0.07	0.03
W69	0.08	0.04	0.08	0.25	**0.30**	0.26	0.05
W75	0.24	0.18	0.01	-0.08	0.28	0.24	0.12
W96	0.02	0.29	-0.00	0.28	**0.40**	-0.05	0.09
W105	0.04	0.13	0.02	**0.36**	**0.42**	0.20	-0.02
W113	0.25	0.29	-0.19	0.16	**0.42**	0.01	0.00
W123	0.12	0.05	0.16	0.24	**0.43**	-0.05	0.02
W132	**0.34**	0.09	0.21	0.03	**0.44**	-0.04	-0.04
W144	0.20	0.19	0.02	0.13	**0.56**	-0.01	0.01
W158	0.16	0.17	0.07	0.11	**0.44**	-0.18	0.20
W167	**0.40**	0.25	-0.26	0.04	**0.42**	-0.04	0.10

W183	**0.35**	0.12	0.12	-0.11	**0.46**	-0.03	-0.06
W174	-0.01	0.29	0.28	0.04	**0.39**	-0.14	0.15
W186	0.03	**0.34**	0.19	-0.10	**0.36**	-0.09	0.22
W191	0.08	0.22	0.18	0.05	**0.39**	0.13	0.28
W194	-0.04	0.11	0.17	**0.31**	**0.39**	0.17	0.08
W196	0.19	0.22	0.18	0.15	**0.32**	-0.13	0.16
W198	-0.02	**0.38**	0.04	0.24	**0.49**	0.10	0.04
W204	**0.39**	0.07	0.10	-0.17	**0.47**	-0.02	0.16
W207	0.01	**0.35**	-0.25	-0.02	**0.52**	0.02	0.12
W210	0.23	0.12	**0.31**	-0.06	**0.46**	-0.12	0.07
W213	-0.07	0.18	0.07	0.14	**0.44**	0.10	0.22
W208	0.25	**0.31**	-0.08	0.08	**0.35**	0.15	-0.00
W228	0.05	**0.35**	-0.06	0.17	**0.42**	0.17	0.18
W229	0.07	0.24	0.04	0.28	**0.33**	-0.01	0.27
W230	0.09	0.28	0.08	0.20	**0.40**	0.13	0.27
W244	0.20	0.23	0.08	0.18	**0.38**	0.25	-0.13
W262	0.13	0.14	0.11	**0.30**	**0.31**	0.09	0.24
W263	**0.39**	0.18	-0.16	0.11	**0.43**	0.01	0.11
W264	**0.42**	0.10	0.17	-0.18	**0.48**	0.00	-0.06
W266	0.16	**0.36**	-0.14	0.00	**0.47**	0.08	-0.01
W272	0.20	0.09	**0.33**	-0.10	**0.36**	-0.09	0.17
W280	0.04	**0.38**	-0.07	0.19	**0.47**	0.07	0.14
W281	**0.32**	0.05	0.03	0.19	**0.34**	-0.10	0.08
W286	0.26	0.21	-0.10	0.07	**0.57**	-0.02	0.20
W290	-0.03	**0.41**	-0.12	0.09	**0.43**	0.08	0.17
W301	0.06	0.26	-0.00	0.15	**0.45**	-0.03	**0.31**
W302	0.02	**0.31**	-0.03	0.11	**0.49**	-0.01	0.24
W304	**0.36**	0.26	-0.24	0.01	**0.40**	0.09	-0.06
W307	0.05	**0.44**	-0.08	0.10	**0.48**	-0.02	0.16
W311	0.13	**0.30**	0.12	0.22	**0.40**	0.04	-0.01
W328	0.28	0.01	0.28	-0.09	**0.41**	-0.06	0.01
W360	0.15	**0.37**	-0.12	0.04	**0.42**	0.01	0.14
W389	0.11	0.18	0.05	0.12	0.27	0.06	0.16
W400	0.25	**0.36**	-0.17	-0.01	**0.43**	0.15	0.02
W5	0.17	-0.16	0.25	0.05	-0.12	**0.46**	-0.04
W36	0.19	0.06	0.03	0.01	0.00	**0.43**	0.10
W50	**0.37**	0.02	0.10	0.07	-0.06	**0.51**	-0.08
W52	-0.12	0.16	0.13	0.17	0.21	0.23	0.20
W73	**0.32**	0.13	-0.18	0.10	0.11	**0.37**	0.12
W89	0.27	-0.15	0.17	0.10	-0.09	**0.57**	-0.05
W162	**0.37**	0.01	0.01	-0.07	0.04	**0.63**	0.07
W180	**0.39**	0.02	-0.02	0.03	-0.02	**0.60**	0.00
W265	**0.32**	**0.32**	-0.07	0.21	-0.07	**0.35**	0.21
W269	-0.03	0.27	0.19	0.21	0.12	**0.32**	-0.00
W274	**0.46**	-0.00	-0.04	-0.04	-0.00	**0.47**	0.07
W278	**0.40**	-0.13	0.25	0.07	-0.07	**0.54**	0.03
W312	**0.34**	-0.06	0.14	0.07	0.05	**0.55**	-0.05
W330	0.15	-0.06	**0.35**	0.02	-0.13	**0.52**	-0.06
W336	**0.38**	0.03	-0.02	0.01	0.05	**0.64**	-0.01
W388	**0.47**	0.02	0.09	-0.07	0.03	**0.57**	0.10
W20	-0.08	0.00	0.10	0.13	0.21	0.07	**0.39**
W39	0.17	0.13	0.05	0.15	0.17	0.00	**0.24**
W51	0.07	0.18	0.00	0.23	0.02	0.06	**0.34**

W59	-0.00	0.12	0.27	-0.00	0.11	-0.03	**0.46**
W63	0.15	0.01	0.28	0.03	0.09	0.02	**0.37**
W79	0.05	**0.33**	0.29	-0.02	0.04	-0.05	**0.40**
W102	0.05	0.19	**0.34**	0.16	0.19	-0.05	**0.40**
W111	0.12	0.11	0.23	-0.03	0.05	0.04	**0.43**
W131	0.04	**0.32**	0.21	-0.07	0.28	-0.06	**0.41**
W133	-0.02	0.20	**0.34**	0.09	-0.06	0.04	**0.42**
W177	0.04	0.21	0.17	0.17	0.04	0.22	**0.39**
W179	0.11	0.27	0.18	0.15	0.20	0.06	**0.33**
W184	0.15	0.28	0.12	0.09	0.24	-0.04	**0.32**
W188	0.05	**0.34**	0.16	-0.09	0.20	0.00	**0.41**
W190	0.01	**0.34**	0.28	0.18	0.06	0.05	**0.36**
W226	0.06	0.15	0.26	0.08	0.08	0.04	**0.51**
W227	-0.01	0.28	0.28	-0.03	0.17	0.08	**0.43**
W261	0.26	0.11	**0.31**	0.02	0.15	-0.05	**0.37**
W294	0.01	**0.37**	0.03	0.13	0.18	0.06	**0.40**
W317	0.11	0.15	**0.35**	0.12	0.14	-0.08	**0.37**
W349	**0.31**	0.17	-0.01	**0.32**	0.06	0.12	**0.35**
W393	0.08	0.13	0.23	0.12	0.12	**0.30**	**0.33**
Expl.Var	38.59	27.51	19.55	15.92	16.84	9.09	9.37
Prp.Totl	0.10	0.07	0.05	0.04	0.04	0.02	0.02

Note: Loadings greater than |.30| are in boldface.