Parental free descriptions of their infants/toddlers: do they resemble the Five-Factor Model of personality?

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Abstract: During the past decade, developmental psychologists have begun to search for the antecedents of the Five-Factor Model (FFM) adult personality dimensions in childhood. Based on a free-descriptive approach the Five-Factor domains were strongly replicated in descriptions by parents of 3 to 12-year-old children in different countries. This study was designed to examine whether the parental free-descriptions of their infants and toddlers could as well be categorised by the FFM taxonomy. It compared the frequency of category use for several groups of children to determine how they might vary by the child's age, gender, and by which parent provided the descriptions. 101 Slovenian children (mean age 14.4 months) were described by 100 mothers and 85 fathers. Their expressions were coded by an elaborate coding scheme including five main categories, with three subcategories each, and nine additional categories outside the FFM. Approximately four fifths of the parental responses were classified within the FFM, which proves the taxonomy useful for describing the infants and toddlers. No significant differences in the proportions of the descriptors were obtained by the rater and by the child's gender for any of the (sub)categories. Several age differences between the parental perceptions of infants and toddlers were found significant. They are suggested to reflect rapid behavioural changes during the first two years of the child's life. These changes are supposed to shift the parental focus of attention to additional and/or different aspects of the child's behaviour in his/her second year compared to the first year. Thus the parents use somewhat different aspects of the child's behaviour to make social comparisons between the toddlers than between the infants.

Key words: infants, toddlers, parental descriptors, personality, Five-Factor Model

Starševi prosti opisi dojenčkov/malčkov: se uvrščajo v petfaktorski model osebnosti?

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Povzetek: V prejšnjem desetletju so psihologi, ki se ukvarjajo z razvojem, pri otrocih pričeli raziskovati predhodnike osebnostnih lastnosti odraslih kot jih odkriva Petfaktorski model (PFM). Na podlagi starševih opisov otrokove osebnosti (starost od 3 do 12 let) v različnih družbah so ugotovili, da lahko te opisnike večinoma razvrstimo na pet vsebinskih področij, ki jih opredeljuje PFM. V pričujoči študiji sem preverjala, ali je PFM taksonomija ustrezna tudi za ocenjevanje starševih opisnikov dojenčkove in

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malčkove osebnosti. Primerjala sem pogostnost starševe uporabe opisnikov po posameznih kategorijah PFM, da bi ugotovila, ali se le-ta razlikuje glede na otrokovo razvojno obdobje in spol ter med materami in očeti. 100 slovenskih mater in 85 očetov je skupno opisalo 101 otroka (povprečna starost 14,4 mesece). Opisniki so bili ocenjeni s pomočjo natančne ocenjevalne sheme, ki vključuje pet širših kategorij, od katerih ima vsaka po tri podkategorije, in devet dodatnih kategorij, ki ne sodijo na področje PFM. Približno štiri petine starševih opisnikov se je razvrstilo v območje PFM, kar podpira uporabnost taksonomije pri opisovanju dojenčkov in malčkov. Deleži opisnikov, ki so jih podale matere in očetje, se niso pomembno razlikovali za nobeno izmed (pod)kategorij. Prav tako se niso razlikovali med dečki in deklicami. Rezultati odkrivajo nekatere pomembne razlike med deleži opisnikov, s katerimi so matere in očetje opisovali dojenčke v primerjavi z malčki. Menim, da te starostne razlike odražajo hitre spremembe, ki so značilne za otrokovo obnašanje v prvih dveh letih življenja. Skladno s temi spremembami starši svojo pozornost v drugemu letu otrokove starosti usmerijo na dodatne in/ali drugačne vidike njegovega obnašanja, ne le na tiste, ki so se izražali prvem letu življenja. Malčke tako med seboj primerjajo po nekoliko drugačnih vidikih obnašanja kot dojenčke.

Ključne besede: dojenčki, malčki, starševi opisi, osebnost, petfaktorski model

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Impressive replicability of the Five-Factor Model (FFM) in adult personality psychology (for an overview see Digman, 1990; Goldberg, 1990) raised the question how these robust five dimensions, Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness, may develop in childhood. The first studies with school-age children, assessed by their teachers on personality rating scales, seemed promising since they replicated the Five-Factor personality structure (Digman & Inouye, 1986; Digman & Takemoto-Chock, 1981). The evidence for the validity of the FFM in childhood was extended with further research. Using the bipolar adjective scales the results of the teachers' ratings of 4- to 12- year old Dutch children supported the FFM to represent individual differences in children (Mervielde, Buyst & DeFruyt, 1995). Similar results were obtained with self-reports of 9-12 year old German (Borkenau & Ostendorf, 1989; Little & Wanner, 1998) and Slovenian children (Pislak, 1999). The children's self-assessments on the Big-Five Personality Inventory for Children (Little & Wanner, 1998) also showed a clear pattern of developmental differentiation of personality factors with increasing age of children (Little & Wanner, 1998; Pislak, 1999).

However, these rating scales and personality inventories for children do not represent the full range of individual differences in children since they measure what theorists think is important rather than what the respondents would use as an important descriptor. On the other hand, no temperamental model (e.g. Buss & Plomin, 1984; Rothbart & Derryberry, 1981; Thomas & Chess, 1977, 1982) seemed to satisfactorily explain the individual differences that are important for parents and teachers in their everyday life with the children (Havill, Allen, Halverson Jr. & Kohnstamm, 1994; Kohnstamm, Mervielde, Besevegis & Halverson Jr, 1995). Based on an assumption that naturally occuring descriptors of children from the personality lexicon

of their parents and teachers would provide more information about how the adults assess children, than does an analysis of items in personality inventories, the researchers approached their investigation of child personality from an adult's free-response perspective. This research approach with children as subjects developed in the nineties (Havill, et al., 1994; Kohnstamm, et al., 1995) and consisted of asking the parents to describe their children's personality in their own words. To categorise the generated expressions a coding system was developed based on a mixture of existing personality taxonomies (Havill, et al., 1994). Using this coding system recent studies revealed that the most frequently mentioned personality constructs obtained by the parents of 3-12 year old children in different societies (e.g. Havill, et al., 1994; Jarmuz & Marszal-Wisniewska, 1995; Kohnstamm, et al., 1995) and by the children's teachers (Mervielde, 1994) could be classified by the FFM.

Three studies (Havill, et al., 1994; Zupančič, 1999a, 1999b) demonstrated that this taxonomy might be considered relevant even for younger samples as at least three quarters of all descriptors given in reference to infants and toddlers could be classified within its framework. Yet the studies on infants/toddlers considered only maternal descriptions of their children. Nevertheless, the results of the three studies based on U.S. and Slovenian mothers' free reports on their infants'/toddlers' personality yielded consistent results. The Five-Factor dimensions accounted for a large proportion of maternal descriptions of their children with Extraversion being the largest category and Emotional Stability (which equals Neuroticism in FFM for adults) and Conscientiousness being the smallest. The primary goal of the present research was to determine what characteristics the Slovenian fathers in comparison to the mothers ascribe to their infants/toddlers.

The free-descriptive approach of studying the child's personality, based on the FFM, revealed some consistent differences by the children's age when assessed by their parents across different countries. Parental free-language responses indicate that some of the Five-Factor dimensions, as well as those outside the FFM domain, are more appropriate for older than younger children. The mothers of Georgian (U.S.) and Slovenian infants/toddlers describe their children with fewer words and phrases that could be coded as Counscientiousness, Emotional Stability and Agreeableness than the older children (three years and up) and more in terms of Extraversion (Havill, et al., 1994; Zupančič, 1999a). These results contribute to the face validity of the coding procedure based on the FFM, since it is difficult to conceptualise very young children as responsible, efficient, tidy, loyal and reliable. At the same time, non-crying, emotionally stable, non-emotional babies are exceptions. Mothers might perceive the opposite of these characteristics as normative for this age group of children. Thus they cannot easily distinguish infants/toddlers from each other in terms of characteristics referring to Conscientiousness, Emotional Stability and Agreeableness.

Comparing Dutch, Flemish and Greek parental descriptions of their 3-, 6- and 9-year-old children, Kohnstamm et al. (1995) found an age increase in the frequency of descriptors assessed in Conscientiousness, Emotional Stability and Openness/In-

tellect categories. When examining the parental natural language descriptions of their 3-, 6-, 9- and 12-year-old children in seven countries (Belgium, the Netherlands, Germany, Greece, China, the U.S.A. and Poland), Slotboom, Havill, Pavlopolous and DeFruyt (1998) also found some age-specific behavioural traits of children. The three-year-olds were percieved more in terms of Extraversion than the older children, with a linear age decrease in the proportions of this type of decriptors. This was established as primarily due to the age decrease in Sociability and Activity descriptors. The two older groups of children tended to be described in more Agreeableness terms than the younger two groups, mainly due to an age increase in the use of the descriptors coded in the Helpfulness facet. In contrast, (dis)Agreeablenes descriptors were most frequently used by parents to describe the youngest group of children, especially in terms of the (un)Manageability facet. As with the differences obtained between the toddlers and the older children (Havill, et.al., 1994), the descriptors coded in the Conscientiousness category were seldom used by the parents of the youngest children and the frequencies of these descriptors' use increased with the children's age, especially with respect to the descriptors coded in the Carefulness and the Diligence facet (Slotboom, et al., 1998).

The present study was designed to explore whether the age-related differences in personality descriptions as given by the Slovenian parents appear already in the youngest age periods of the child's postnatal life. So far, only one study with the mothers of very young children (Havill, et al., 1994) compared the personality descriptions of toddlers with those of pre-school and school age children. Due to a rapid development in the first two years of a child's life it was supposed that the parents of infants and toddlers might differ in their frequency of use of descriptors classified in the various (sub)categories of the FFM as well as outside of this domain.

Kohnstamm et al. (1995) compared the parental free-descriptions of their pre-school and school age children in three European countries and found very few gender differences at the main category level, but some in subcategories. The girls were described as more sociable and by more positive descriptors than the boys, while the boys were ascribed more activity and more negative characteristics than the girls. Similarly, DeFruyt, Van Hiel and Buyst (1998) established small gender differences in their cross-cultural study of parental free descriptions which included reports on pre-school and school age children. Girls were described as more conscientious than boys and, at the facet level, as more sociable, dominant and careful. The boys were ascribed more activity, openness to experience and less diligence. The study by Havill, et al. (1994) with Georgian parents of pre-school and school age children also determined the descriptions of boys and girls as being similar. However, some significant gender differences were obtained in frequency of some categories. The girls were described by more phrases denoting Sociability, whereas the boys were described by more phrases referring to Openness to Experience, (un)Sociability and Activity than the girls. The results of the three studies (DeFruyt, et al., 1998; Havill, et al., 1994;

Kohnstamm, et al., 1995) with different samples and in different countries are clearly consonant with respect to sociability and activity level. As seen by their parents, girls appear to be more sociable than boys, while boys are perceived as more active than girls. The present study on Slovenian parental free-descriptions aimed to examine wheather the frequency of (sub)category use already varies by the child's gender at an earlier age, namely in infancy and toddlerhood.

The Five Factor domains were replicated in descriptions of mothers and fathers of pre-school and school age boys and girls in the Georgian (Havill, et al., 1994) as well as in three European samples of parents (Kohnstamm, et al., 1995). In the current study, the attention was paid to the parental focus on the domains of personality traits when they described their infants and toddlers. Comparing the fathers' and the mothers' natural personality lexicon when describing their very young children, the importance of different (sub)categories of personality by the informants in different roles (mother and father) was intended to be examined.

Method

Participants

Hundrend and one Slovenian children were assessed, 100 by their mothers and 85 by their fathers as shown in Table 1. The parents were recruited by the psychology students as part of their assignments for a course on developmental psychology. The information on the education and age of the parents was given only from some of the respondents. Seventy fathers gave the information about their age (M = 33 years) and sixty-three of them reported about their education (34 finished either vocational or high school and 29 obtained either college or university degree). Sixty-nine mothers stated their age (M = 30 years) and sixty-three of them gave the information about their education (36 had either vocational or high school education, while 27 obtained either college or university degree).

Table 1: Distribution of participants by children's age, gender and rater

	2 – 14 months	15 – 34 months	Total
Number of children	48	53	101
Boys	24	34	58
Girls	24	19	43
Average age in months	8.3	20.2	14.4
Rated by: Mother	47	53	100
Father	36	49	85

Instruments

Three questions were given to each of the child's parents. The questions listed below were based on parental free-descriptive studies of their children (e.g. Havill, et al., 1994; Kohnstamm, et al., 1995) and they were asked in the following order:

a) »Can you tell me what you think is characteristic of your child?« When parents stated descriptions, only neutral prompts were given to them to continue their descriptions;

b) »Can you tell me the meaning of each description stated? What does each of these words (phrases) mean to you?«

c) »Can you tell me an example of your child's behaviour representing each of these meanings?«

To categorise the parental descriptions a coding system developed by Havill et al., (1994), as also cited in Kohnstamm et al. (1995, 1997, 1998) was used. It consists of five categories inspired by the FFM framework, i.e. Extraversion (I), Agreeableness (II), Conscientiousness (III), Emotional Stability (IV) and Openness/Intellect (V), and three subcategories (facets) within each of the five categories. Within this coding system, these are an inductively derived inventions of the authors and are based on clusters of high-loading items as published in several FFM studies (e.g. Goldberg, 1993). Thus, Extraversion consists of Sociability (IA), Dominance (IB) and Activity (IC); Agreeableness of Amiability (IIA), Manageability (IIB) and Honesty (IIC); Conscientiousness of Carefulness (IIIA), Dependability (IIIB) and Diligence (IIIC); Emotional Stability of Reactivity (IVA), Self-confidence (IVB) and Anxiety (IVC); and Openness/Intellect of Openness to Experience (VA), Interest (VB) and Intelligence (VC). Eight additional categories outside the FFM were coded, each of them having its own rationale in studying children (for overview see Kohnstamm et al., 1997, 1998). These are Independence (VI), Mature for Age (VII), Health (VIII), Rhythmicity (IX), Gender-Appropriate/Physical Attractiveness (X), School Performance (XI), Contact Comfort (XII) and Family Relations (XIII). An additional category Ambiguous (XIV) was also created by the authors (Havill, et al., 1994; Kohnstamm, et al., 1995) to contain all other unanticipated characteristics of the target children which were too ambiguous to code or were not pertinent to personality. All of these 14 categories and their subcategories are coded as positive (high end) or negative (low end), e.g. »cries very rarely« is coded as IVA+ and »quickly looses temper« is coded as IVA-. Kohnstamm et al. (1995, 1997) reported the intercoder agreement and intracoder reliability over the 14 main categories to range between 80% and 90% and the reliabilities over the 15 subcategories in the five main categories between 70% to 80%.

Procedure

The mothers and the fathers were interviewed separately in their homes by the psychology students. Hundred and one student carried out the interview with the target child's parents, thus each student interviewed one or, when possible, both of the parents of a given child. The students received two hours of training as a part of the course of developmental psychology. They were instructed to establish an initial contact with the parents, to inform the parents about the study (see the paraghaph below), to ask the three questions in the proposed rank order (see Instruments), i. e. to obtain all of the descriptive words first (the first question), then to return to the stated descriptive words by asking the parent about the meaning of each of these words separately (the second question), and finally to encourage the parent to describe an example of the child's concrete behaviour reflecting the meaning of each of the previously stated descriptive words (the third question). The students were instructed to obtain as many descriptive words by each of the child's parents as possible and to let the parents express as many examples they wish. The encouragement of the parents to give more descriptions was obtained simply by »Can you think of another characteristic?« or »Any more characteristics?« or »Anything else? Take your time,« or »You can express everything you think is characteristic of your child in your own words. We will discuss about the meaning of these words later.«

　　　Prior to asking the three questions about their children, the parents were informed about the study. They were told: "We are interested in the very young child's personality. We would like to know how the Slovenian parents perceive their infants and toddlers. We will ask you three questions about your child. There are no right or wrong answers. You can use as many words as necessary to give us a thorough portrait of your child. All your statements are confidential and will be used for the research purposes only." Then, everything the parents said, word to word, was written down by the students. The obtained data were later transcribed into table forms, consisting of three coloumns: Descriptor, Meaning of the descriptor as given by the parent and Example of the corresponding child's behaviour. The number of rows varied accordingly to the number of descriptors. All of the statements for each child by each of his/her parents were transcribed into a separate table form and coded.

　　　The students who implemented the interviews and were previously trained in coding coded the obtained data using the coding system developed by Havill et al. (1994). When any ambiguities occurred the students were individially supervised by the author. All of the coded data was checked by the author and corrected for some minor mistakes.

　　　The parental answers were coded per unit as positive (high end, +) or negative (low end, -). A unit of the analysis was represented as an adjective, verb, noun or phrase indicative of a child's characteristic (behaviour, trait, skill, ability). Since the coding relied on the meaning of each of the descriptors given by the parents, the unit

of the analysis was not always the answer to the first question. The respondents sometimes used personality descriptive words (answer to the first question) in a different sense than is conventionally used in psychology. For example, a parental description »she is a social girl« (answer to the first question) was denoted by a parent as »she is a caring girl, kind toward other people« (answer to the second question). If considering the descriptive word it would be coded as IA+ (high end of Sociability), but relying on the meaning of this word for the parent of the target child it was coded as IIA+ (high end of Amiability). Sometimes parents used phrases that can be interpreted in different ways. For example, a descriptive word »babyish« could (in the Slovenian language) carry a meaning of the low end of Mature for age and be coded as VII-, or a meaning of being cute and be coded as Physical Attractiveness, as X+, or a meaning of a desire to be cuddled, as Contact Comfort category (XII+). When the parent explained that the toddler likes to hug and kiss a lot it was decided the word »babyish« should be coded as XII+. A few respondents invented their own phrases not carrying a widely shared meaning, i.e. using words not found in the dictionary of Slovenian language thus, leaving the interviewers not knowing what these words mean. Yet, relying on the meaning of such words made the coding possible. If the description of the meaning did not correspond to the descriptive word given, then the description of the meaning of the word (answer to the second question) was taken as a unit of the analysis and not the descriptive word itself (answer to the first question). The example of the child's behaviour in a concrete situation (the third question) served only as a second check in cases where the descriptive words and the meanings of these words did not correspond and when the words, even if later clearly explained in response to the second question, carried ambiguous or unknown meanings.

The conventional meaning of the majority of descriptive words (answer to the first question) was consistent with their explanations (answer to the second question) and with the concrete examples (answer to the third question). In all other cases, the explanations of the words or phrases were consonant with the meaning of the examples. This indicated the validity of the coding with respect to the described meaning of the child's characteristics.

Phrases or words referring to situational causes of the target child's behaviour (e.g. »she startled when she first saw an elephant at the zoo«), to his/her physical attributes (e.g. »his hair is all golden« without an additional information of this characteristic denoting physical attractiveness), to peripherial information about the child (e.g. »when I go to work he is cared for by my mother-in-law«) or indirectly to the target child (e.g. »the infants require an awfull lot of attention«) were not coded. Some of the phrases could be split into simpler parts and coded separately if the meaning of each part was understood when considered independently (e.g. »he is not interested in many activities, but when he is he perseveres well until finished«. This description could be split into »he is not interested in many activities«, coded as VB-, and » he perseveres well until finished«, coded as IIIC+. If the meaning was lost by

dividing the phrase, the phrase was coded as one unit. For example, »she is so fast, she learns enormously quickly« would be misinterpreted if divided into »she is so fast« (IC+) and »she learns enormously quiclky« (VC+). Instead, it was coded only as VC+, since »so fast« refers to the child's cognitive functioning and not to her activity level. Repeated words, including synonyms, in a single interview were not included in the frequency analysis more than once, yet more than one description of the same category was accepted in the analysis not to loose any of the important information. A certain personality characteristic could have been more pronounced in a child or more salient for the parent, so it was mentioned more than once, each time expressing a somewhat different content (an example where two descriptors fit in the same category, e. g. IIA-, would be »he is impatient; he also initiates aggression«).

Results

For all categories separately, the five resembling to the FFM and the nine outside the FFM framework, percentages of the descriptors mentioned by both parents and by the mothers and fathers separately, were computed. The percentages of positive descriptors in each of the main five categories are also presented in Table 2, together with the total number of descriptors and the mean frequency of descriptors per interview. The category School performance (XI) is omitted from the table since the parents did not report on any child's characteristics which could be coded in this category.

82% of all the parental (the mothers' and the fathers' together) descriptors of infants'/toddlers' personality were classified within the FFM framework with Extraversion (I) being the largest category and Conscientiousness (III) and Emotional Stability (IV) being the smallest. The proportions of positive descriptors in a particular category were also calculated. Positive (high end) descriptors predominated on the Five Factor category level. The parents most frequently perceived their infants/ toddlers at the high end of Extraversion (e.g. »he is enthusiastic about everything«), Conscientiousness (e.g. »she persists for a long time to finish an activity«) and Openness/Intellect category (e. g. »she is a very curious baby«), while the descriptions at the low end of the categories were used relatively more frequently within the Agreeableness (e.g.»he resists to comply«) and Emotional Stability category (e.g. »she is hard to comfort«). A very similar overview to this was obtained when maternal and paternal decriptions of their infants/toddlers were treated separately.

The eight categories outside the FFM were seldom represented in the parental descriptions of their infants'/toddlers' with Contact Comfort (XII) category being the largest (e.g. »enjoys physical contact«), followed by Independence (e.g. »wants to do the chores alone«) and Ambiguous (XIV). The latter mainly consisted of descriptions referring to the child's eating and sleeping patterns (e.g. »she does not

Table 2: Percentages of Descriptors Coded in the FFM Categories, in Categories Out-side the FFM Domain and Percentages of Positive Descriptors for the Main Five Cat-egories

Categories	Father All Descriptors	Father Positive Descriptors	Mother All Descriptors	Mother Positive Descriptors	Total All Descriptors	Total Positive Descriptors
Total *N* of Descriptors	641	538	880	726	1521	1264
M of Descriptors	7.5	7.0	8.8	7.2	8.2	7.1
	%	%	%	%	%	%
I	33.4	30.4	31.7	29.4	32.4	29.8
II	20.1	12.2	18.8	11.0	19.3	11.5
III	5.0	4.7	6.1	4.9	5.7	4.8
IV	6.7	4.2	7.6	5.2	7.2	4.8
V	18.9	18.6	16.7	16.3	17.6	17.2
Total I-V	84.1	70.0	80.9	66.8	82.2	68.2
VI	2.7		3.4		3.1	
VII	1.1		0.6		0.8	
VIII	1.7		1.9		1.8	
IX	1.2		2.5		2.0	
X	1.4		1.3		1.3	
XII	3.9		4.7		4.3	
XIII	1.7		1.4		1.5	
XIV	2.2		3.4		2.9	

Note: Father (*N* = 85); Mother (*N* =100); Total (*N* =185); I = Extraversion; II = Agreeable-ness; III = Conscientiousness; IV = Emotional Stability; V = Openness/Intellect; Total I-V = Categories resembling FFM; VI = Independence; VII = Mature for Age; VIII = Health; IX = Rhythmicity; X = Gender Appropriate/Physical Attractiveness; XII = Contact Comfort; XIII = Family Relations; XIV = Ambiguous; all the % are computed of the total *N* of descriptors obtained by the respective group of raters

sleep during the day«). All other categories of the remaining five included in the coding system, except for School performance which did not occur at all, were men-tioned by parents between 2 to 0.8%.

The proportions of the mothers' versus the fathers' descriptions did not differ significantly for any of the categories inside or outside the FFM (see Table 2 for descriptive data). However, the proportion of the fathers' overall descriptors of their children tended to be lower than the proportion of the mothers' descriptors ($\chi^2=3.72$, $df=1$, $0.05< p< 0.10$)[1]. Proportionally, the fathers' and the mothers' descriptors did not significantly differ with respect to the child's gender for any of the categories

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[1] *all of the chi-square tests were computed with the observed frequencies set against the expected frequencies, based on the assumption of equal proportions per (sub)category in the respective two samples (father vs. mother; boys vs. girls; infants vs. toddlers) and used as a simple check on rectangularity of the frequency distributions of a single variable*

inside or outside the FFM (see Appendix, Table 2a for descriptive data and tests of significance).

As shown in Table 2a (Appendix) the toddlers were described by significantly more overall descriptors than the infants, by their fathers as well as by their mothers. This was also established with the fathers' positive descriptions and with the mothers' tendency to ascribe the toddlers more positive characteristics than the infants.

The fathers described the toddlers more frequently in terms of Agreeableness (II) than the infants, and so did the mothers who ascribed their toddlers especially more high end of Agreeableness (II+) than their infants. The mothers attributed significantly more overall Conscientiousness (III) descriptions to the toddlers than to the infants, accounted for especially by the descriptions at the high end of this category (III+). This was also revealed with respect to the fathers' overall and their descriptors at the high end of Conscientiousness.

The fathers described their toddlers by significantly more words denoting Openness/Intellect (V) than the infants, but only at the (V+) high end of this category. However, this result was not obtained with the mothers.

A significantly higher proportion of the fathers' descriptions referring to the Ambiguous (XIV) category, mainly consisting of eating and sleeping habits, was used

Table 3: Percentages of Descriptors of Children in the Five Main Categories at the Facet Level and Percentages of Positive Descriptors

Facets	Father All Descriptors	Father Positive Descriptors	Mother All Descriptors	Mother Positive Descriptors	Total All Descriptors	Total Positive Descriptors
IA	18.9	16.8	18.9	17.2	18.9	17.0
IB	4.4	4.4	3.8	3.8	4.0	4.0
IC	10.1	9.2	9.1	8.5	9.5	8.8
IIA	7.8	6.1	8.9	7.4	8.4	6.8
IIB	12.2	5.9	9.7	3.4	10.7	4.5
IIC	0.1	0.1	0.2	0.2	0.2	0.2
IIIA	1.6	1.2	3.3	2.7	2.6	2.1
IIIB	0.1	0.1	0.1	0.1	0.1	0.1
IIIC	3.3	3.3	2.7	2.0	3.0	2.6
IVA	4.1	1.9	4.8	3.0	4.5	2.5
IVB	0.9	0.9	0.8	0.9	0.9	0.8
IVC	1.7	1.4	1.9	1.5	1.8	1.4
VA	8.3	8.0	8.1	7.8	8.2	7.9
VB	3.9	3.9	3.5	3.4	3.7	3.6
VC	6.7	6.7	5.1	5.0	5.8	5.7

Note: Father ($N = 85$); Mother ($N = 100$); Total ($N = 185$); IA = Sociability; IB = Dominance; IC = Activity; IIA = Amiability; IIB = Manageability; IIC = Honesty; IIIA = Carefulness; IIIB = Dependability; IIIC = Diligence; IVA = Reactivity; IVB = Self-confidence; IVC = Anxiety; VA = Openness to Experience; VB = Interest; VC = Intelligence; all the percentages are computed of the total N of descriptors obtained by the respective group of raters

to describe the infants than the toddlers, but only at the high end of this category (XIV+; e.g. »eats any food offered to him«). The fathers also described the toddlers significantly more frequently in terms of Family relations (XIII) than the infants, but only at the high end (XIII+; e.g. »she is in love with her mother«) of this category, while the mothers made no age differentiation for the categories outside the FFM.

Overall frequencies at the facet level, presented in Table 3, show that Sociability (IA), Manageability (IIB) and Activity (IC) are the subcategories most frequently mentioned by the infants'/toddlers' parents. In the rank order of frequencies they are followed by Amiability (IIA), Openness to Experience (VA), and Intelligence (VC). Consequently, the infants'/toddlers' Extraversion is most frequently described in terms of Sociability (e.g. »he likes to be with others«) and Activity (e.g. »everybody gets tired before she does«), Agreeableness in terms of Manageability (e.g. »he follows our demands«) and Amiability (e.g. »she is kind«), and Openness/Intellect in terms of Openness to Experience (e.g. »he is a curious child«) and Intelligence (e.g. »she understands a lot«). All these parental results are equally applicable to the fathers' as well as to the mothers' descriptions of their infants/toddlers with the rank order of frequencies in Amiability and Openness to Experience facet being reversed with the fathers. Overall, the category Conscientiousness was most frequently described in terms of (IIIC) Diligence (e.g. »he persists following his idea in action«). This is more evident in the fathers, while the mothers described their infants'/toddlers' Conscientiousness rather in terms of (IIIA) Carefulness (e.g. »she is a tidy child«) than Diligence. The category Emotional Stability was usually referred to by the parents in terms of infants'/toddlers' (IVA) Reactivity (e.g. »she can be comforted quickly«), equally by the fathers as by the mothers. Except for Manageability (also with paternal and maternal descriptions treated separately) and Reactivity (with the fathers' descriptions), positive parental descriptors of subcategories predominated. They exclusively or almost exclusively referred to the three facets of Openness/Intellect (VA, VB and VC) and Dominance (IB) presenting a facet of Extraversion (e.g. »expresses his will firmly«).

No significant differences were obtained between the proportions of the mothers' and the fathers' descriptors of their infants/toddlers with respect to any of the subcategories (see Table 3 for descriptive data). At the facet level, there were also no significant differences obtained in the proportions of characteristics the mothers and fathers ascribed to their daughters and their sons (see Table 3a in Appendix for descriptive data and tests of significance).

As shown in Table 3a (Appendix) the fathers ascribed to the toddlers significantly more Amiability (IIA) compared to the infants, especially at its high end (IIA+), while the mothers only tended to make such age differentiation in the same direction, especially at the high end of this subcategory. When considering only the high end of Diligence (IIIC+), significant differences in favour of toddlers were also obtained by the mothers and, at the boarder of statistical significance, also by the fathers. The mothers and the fathers described the toddlers more frequently in terms of Interest

(VB) than the infants. The toddlers were especially ascribed more high end Interest (VB+) than the infants by both of their parents independently. Furthermore, the toddlers were described more frequently in terms of Intelligence (VC) compared to the infants by both of their parents, but only with respect to the high end of Intelligence (VC+).

Discussion

The results of the present study suggest that the categorisation system based on the Five-Factor Model adult personality dimensions (Havill, et al., 1994) has, in addition to the studies of pre-school and school age children (Kohnstamm, et al., 1995, 1997; Slotboom, et al., 1998), relevance for categorising the mothers' as well as the fathers' free descriptors of their infants'/toddlers' personality. The relevance of the FFM categorisation system is somewhat reduced by the low frequency of categories Conscientiousness and Emotional Stability. The obtained findings are consistent with the only studies referring to the mothers' descriptions of the youngest group of children (Havill, et al., 1994; Zupančič, 1999a, 1999b). Maternal free descriptions of their very young children's personality in two different societies obviously resemble the FFM. At the same time, the mothers' and the fathers' organisation of their perception of their infant's/toddler's personality appears to be remarkably similar, as shown in the present contribution.

Before coming to discuss other main findings, it is important to note that the obtained parental descriptors reflect parental perceptions of their child's personality. Besides the child's actual behaviours these perceptions are assumed to be influenced by the parents' personality, their expectations about children and culturally specific norms and values about child development (Besevegis & Pavlopolous, 1999; Kohnstamm, et al., 1995; Zupančič, 1999b). The parental free-responses of their child's personality thus also encode the saliency of certain child's characteristics that are significant for the parents in their daily interactions with the children (Havill, et al., 1994). Furthermore, the results of the present study must be interpreted with some caution since the condition of independence while implementing the chi-square test in order to test age, gender and rater differences was not totally met. Some of the parents produced more than one descriptor per category. The saliency of a particular child's characteristic might had been so strong that they gave more descriptors in that category than the other parents did, regardless of the fact that the repetitions of the same or synonimous descriptors were disregarded in the coding. Moreover, in majority of cases both parents described the same infant/toddler, albeit independently. In future, when data of more very young children (varying by their age and gender) will be included, the data composed of only one interview per child, and a more efficient technique to elicit expanded descriptions of children in their parents will be developed, the differences between the subsamples will also be tested by general linear

models of analyses since the number of descriptors coded in the same (sub)category could as well be treated as an ordinal variable.

At the main category level, the infants'/toddlers' parents most frequently used personality descriptive words coded as Extraversion. A relatively high proportion of their responses were also accounted for Agreeableness and Openness/Intellect dimensions. In turn, the very young children were not described with many words that could be coded in the dimensions of Conscientiousness or Emotional Stability. Comparing the obtained findings (only the mothers' responses) with related research applied on mothers of very young children in two different societies (Georgia and Slovenia), a remarkable similarity in the proportions of maternal descriptions of their infants/toddlers can be claimed. The proportions of maternal descriptions in the present and in the two comparable studies (Havill, et al., 1994; Zupančič, 1999a) declined in a following rank order: Extraversion, Agreeableness, Openness/Intellect, Emotional Stability and Conscientiousness. No less than three quarters of all of the responses were classified within the FFM categorisation scheme in any of these studies. With the respect to the proportions of descriptive words within each of the five categories the American mothers attributed to their infants/toddlers slightly more characteristics coded as Extraversion and Agreeableness than the Slovenian mothers in the present study (i.e. Extraversion: 37.9% vs. 31.7%, Agreeableness: 22.1% vs. 18.8%), while the Slovenian mothers proportionally ascribed to their infants/toddlers slightly more characteristics coded as Openness/Intellect, Emotional Stability and Conscientiousness (the latter i.e. 6.1% vs. 1.5%). Two succesive Slovenian studies with independent samples of mothers, the present one and a preliminary one (Zupančič, 1999a), based on 207 maternal free descriptions of their infants/toddlers, yielded even more similar results than the American Slovenian comparison (e.g. the proportions of words coded as Extraversion 31.7% vs. 31%, Conscientiousness 6.1% vs. 6.6%, Emotional Stability 7.6% vs. 8.9%). These comparisons generally suggest cross-cultural and age replicability of the findings as well as some cross-cultural differences, also found with parental free descriptions of older children (Kohnstamm, et al., 1995; Slotboom, et al., 1998).

Comparisons of maternal descriptions of their infants/toddlers at the facet level of the main five FFM categories and for the categories outside of the FFM domain were possible only between the present and the preliminary study (Zupančič, 1999a). At the facet level, there was a high degree of consistency between the proportions of maternal responses. It seems that sociability, manageability, activity, amiability, openness to experience and intelligence are the most salient characteristics the Slovenian mothers see in their children in this youngest developmental period. Personality descriptive words connoting these characteristics are presumably salient for the mothers' social comparisons of the infants/toddles to their peers and are therefore more frequently spontaneously used. A modest degree of similarity was found for the categories outside the FFM with consistently higher proportions of maternal responses coded as Contact Comfort, Independence and Rhythmicity compared to the propor-

tions of personality descriptive words coded as Mature for age, Health, Gender Appropriate/Physical Attractiveness and Family Relations, while the descriptors that would be coded as School Performance did not occur at all in either of the two studies. The older infants and toddlers attending kindergarten can be hardly evaluated in terms of their achievement or performance. In both Slovenian infant/toddler studies, the category Ambiguous predominantly consisted of descriptions referring to the infant's/toddler's eating and sleeping patterns which are probably important concerns of parents with very young children. The parents of infants especially face the problems of waking up several times at night, transition in feeding from milk to solid food. On the other hand, as already established by Havill, et al. (1994), the mothers surprisingly seldom described their infants and toddlers in terms of rhythmicity, an important temperamental dimension in the Thomas and Chess framework, (1977, 1982), which indicates that biological regularity is not a salient behavioural characteristic of very young children for the mothers and the fathers, as shown in the present study.

Althrough spouses describing their infant/toddler in the present study may have given different personality characteristics of a particular child, the proportions of the fathers' and the mothers' descriptions did not differ significantly for any of the categories/subcategories as also established by Kohnstamm, et al. (1995) with pre-school and school age children in three different societies. A tendency of the Slovenian mothers giving more overall descriptors of their infants/toddlers than the fathers, could reflect that the mothers know their children somewhat more in detail than the fathers, presumably due to their larger amount of daily interactions with the children compared to the fathers, at least during the first year after giving birth. However, the mothers and the fathers in the present study differed somewhat in their perceptions of the saliency of the child's particular characteristics with respect to his/her age.

The absence of significant gender differences in the fathers' and the mothers' descriptions of their infants'/toddlers' personality suggests no or negligeable gender-differentiation of children's behaviour in the earliest period of postnatal life. The results might as well reflect an absence of parental gender-typing in infancy and toddlerhood, at least in Slovenian relatively well educated families. At least some controversy in research findings on personality gender differences (e.g. Block, 1983; DeFruyt, et al., 1998; Havill, et al., 1994; Maccoby & Jacklin, 1974; Ruble, 1988; Zupančič, Gril & Kavčič, 2000) in children can be attributed to different levels of analysis and comparison (DeFruyt, et. al, 1998), the children's age, culture and time of mesurement (Zupančič, et al., 2000), as well as to gender and educational level of the raters who assess the children (Marjanovič Umek & Zupančič, 2001).

The obtained differences between the two age groups intuitively make sense and contribute to the face validity of the existing coding procedure. The mothers and the fathers used a greater number of descriptors (especially positive ones) when reporting on the toddlers' compared to the infants' personality. This was mainly due to notable age increases in the proportions of their personality descriptive words

coded in Agreeableness, Conscientiousness and Openness/ Intellect (the latter obtained only by the fathers) categories and, at the facet level, to the age increases of descriptors coded in Amiability, Diligence, Interest and Intelligence facets. The toddlers were, when compared to the infants, described by their mothers and fathers with more overall Agreeableness descriptors, mostly accounted for through a higher proportion of Amiability descriptors, especially positive ones. Due to their relative motor, cognitive, socio-cognitive limitations, and relatively poor self-control, infants can hardly be expected to be helpful, caring, patient, compliant, loving. With rapidly growing abilities, the toddlers in their second year of life start to overtly display their individual characteristics that could be interpreted in terms of agreeable, conscientious and intelligent behaviours by the adult observers. The more frequent emergence of such behaviours enables parents to make social comparisons of the children with their peers in relation to the respective characteristics, as well as to change their specific expectations about the children's behaviours. Although the very young children were not ascribed many characteristics that could be coded in Contientiousness category, the frequency of parental descriptions coded in Diligence facet increased with the age of children from their first to the second year of life. The toddlers were ascribed more persevering and determined (high end Dilligence) personality characteristics than the infants. This increase might reflect the child's emerging need for independent activity in his/her second year of life, usually expressed in an increased amount of solitary play and deliberate engagement in other goal directed actions by his/her own (Zupančič, 1999b). The proportions of the mothers' and the fathers' personality descriptive words coded at the high end of Interest and Intelligence facets also increased by age. Presumably the child's interest in various activities is more clearly noticed by parents when children become able to actively engage in such activities, that is in toddlerhood as compared to infancy. The same could be claimed with respect to intelligent behaviours. Although more cognitively competent as assumed in the past, infants are still relatively unapt to overtly express what they know and understand (see for overview e. g. Berk, 1997; Zupančič, 2000). Thus parents cannot easily distinguish infants from each other in terms of intelligent behaviours, while they might be more likely to do so with the toddlers due to their overt cognitive competencies as compared to the infants, e. g. means-ends oriented activity, terciary circular reactions, mental combinations, emergence of deferred imitation at play, rapid language development and development of theory of mind. Consistent to this, an age decrease in the saliency of eating and sleeping patterns and an age increase in the importance in the child's familiy relations for the fathers was revealed.

The results of the present study suggest that, in addition to previous cross-sectional and cross-cultural analyses with the parents of pre-school and school age children, the Five-Factor personality dimensions account for a large proportion of parental natural language descriptions of their infants and toddlers. Based on a free-descriptive approach the questionnaires that encompass the children's characteris-

tics which are the most salient for their parents were constructed to assess the preschool and school age children's personality. Preliminary analyses of these quationnaries showed that the obtained dimensions resemble the FFM and that their factorial structure becomes closer to the adult FFM through increasing age of the assessed children (Besevegis & Pavlopolous, 1999; Jarmuz & Marszal-Wisniewska, 1997; Mervielde & DeFruyt, 1999). How do these personality dimensions develop from infancy to early childhood still remains an open question that awaits inquiry. The growing amount of data that supports the findings of the infants' and toddlers' personality to be described by the adults differently from the item contents in temeramental questionnaries might present the first step toward the construction of instruments aiming to assess personality constructs which are really salient for the very young children's significant others, mainly their parents. Providing such instruments, based on the lexicon of parental descriptions, would also open a possibility to link the development of personality in infancy and toddlerhood with later age periods.

References

Berk, L.E. (1997). *Child development*. Boston: Allyn and Bacon.

Besevegis, E. & Pavlopolous, V. (1999). *Personality structure in infancy and childhood: Developmental trends and relation to the Big Five.* Paper presented at the IXth European Conference on Developmental Psychology, Spetses, Greece.

Block, J.H. (1983). Differential premises arising from differential socialization of the sexes: Some conjectures. *Child Development, 54*, 1335-1354.

Borkenau, P. & Ostendorf, F. (1989). Untersuchungen zum Fünf-Faktoren-Modell der Persönlichkeit und seiner diagnostischen Erfassung. *Zeitschrift für Differentielle und Diagnostische Psychologie, 10,* 239-251.

Buss, A.H. & Plomin, R. (1984). *Temperament: Early developing personality traits.* Hillsdale, NJ: Lawrence Earlbaum Associates.

De Fruyt, F., Van Hiel, A. & Buyst, V. (1998). Parental personality descriptions of boys and girls. In G.A. Kohnstamm, C.F. Halverson, Jr., I. Mervielde & V.L. Havill (Eds.), *Parental descriptions of child personality* (pp. 155-167). Mahwah, NJ: Lawrence Erlbaum Associates.

Digman, J.M. (1990). Personality structure: Emergence of the Five-Factor model. *Annual Review of Psychology, 41,* 417-440.

Digman, J.M. & Inouye, J. (1986). Further specification of the five robust factors of personality. *Journal of Personality and Social Psychology, 50,* 116-123.

Digman, J,M. & Takemoto-Chock, N.K. (1981). Factors in the natural-language of personality: Reanalysis, comparison, and interpretation of six major studies. *Multivariate Behavioral Research, 16*, 149-170.

Goldberg, L.R. (1990). An alternative »description of personality«: The Big Five factor structure. *Journal of Personality and Social Psychology, 59*, 1216-1229.

Goldberg, L.R. (1993). The structure of phenotypic personality traits. *American Psychologist, 48*, 26-34.

Havill, V.L., Allen, K., Halverson, C.F. Jr. & Kohnstamm, G.A. (1994). Parents' use of Big-Five categories in their natural language descriptions of children. In C.F. Halverson, Jr., G.A. Kohnstamm & R.P. Martin (Eds.), *The developing structure of temperament and personality from infancy to adulthood* (pp. 371-386). Hillsdale, NJ: Lawrence Erlbaum Associates.

Jarmuz, S. & Marszal-Wisniewska, M. (1995). *Children's personality in parental free descriptions – results of Polish sample*. Paper presented at the IVth European Congress of Psychology.

Jarmuz, S. & Marszal-Wisniewska, M. (1997). *Dimensions of child's personality as they emerged from the instruments based on parental free descriptions*. Paper presented at the IVth Conference on Psychological Assessment, Lisbona.

Kohnstamm, G.A., Halverson, C.F. Jr., Havill, V.L. & Mervielde, I. (1997). Parents' free descriptions of child characteristics. A cross-cultural search for the developmental antecedents of the Big Five. In S. Harkness & C.M. Super (Eds.), *Parents' cultural belief systems. Their origins, expressions, and consequences* (pp. 27-55). New York: Guilford Press.

Kohnstamm, G.A., Halverson, C.F. Jr., Mervielde, I. & Havill, V.L. (1998). Analyzing parental free descriptions of child personality. In G.A. Kohnstamm, C.F. Halverson, Jr., I. Mervielde & V.L. Havill (Eds.), *Parental descriptions of child personality* (pp. 1-19). Mahwah, NJ: Lawrence Erlbaum Associates.

Kohnstamm, G.A., Mervielde, I., Besevegis E., & Halverson, C.F. Jr. (1995). Tracing the Big Five in parents' free descriptions of their children. *European Journal of Personality, 9,* 283-304.

Little, T.D. & Wanner, B. (1998). *Validity of a Big-Five Personality Inventory for Children (B5P-C)*. Poster presented at the International Society for the Study of Behavioural Development Meeting, Bern.

Maccoby, E.E. & Jacklin, C.N. (1974). *The psychology of sex differences*. Stanford, CA: Stanford University Press.

Marjanovič Umek, L. & Zupančič, M. (Eds.) (2001). *Psihologija otroške igre. Od rojstva do vstopa v šolo [Psychology of child's play. From birth through starting school]*. Ljubljana: Znanstveni inštitut Filozofske fakultete.

Mervielde, I. (1994). A Five-Factor Model classification of teachers' constructs on individual differences among children ages 4 to 12. In C.F. Halverson Jr., G.A. Kohnstamm & R.P. Martin (Eds.), *The developing structure of temperement and personality from infancy to adulthood* (pp. 387-397). Hillsdale, NJ: Lawrence Erlbaum Associates.

Mervielde, I., Buyst, V. & De Fruyt, F. (1995). The validity of the Big-Five as a model for teachers' ratings of individual differences among children aged 4 – 12 years. *Personality and Individual Differences, 18,* 525-534.

Mervielde, I. & De Fruyt, F. (1999). Construction of the hierarchical personality inventory for children (HiPIC). In I. Mervielde, I. Deary, F. De Fruyt & F.Ostendorf (Eds.), *Personality psychology in Europe.* Proceedings of the Eight European Conference on Personality Psychology (pp. 107-127), Tilburg: Tilburg University Press.

Pislak, A. (1999). *Preizkus vprašalnika Velikih pet osebnostnih lastnosti na slovenskih osnovnošolcih. [Validation of The Big Five Personality Questionnaire with*

Slovenian pupils in the primary school]. Unpublished graduate thesis, Filozofska fakulteta, Univerza v Ljubljani, Ljubljana.

Rothbart, M.K. & Derryberry, D. (1981). Development of individual differences in temperament. In M.E. Lamb & A.L. Brown (Eds.), *Individual differences in infancy: Reliability, stability, prediction* (pp. 411-429). Hillsdale, NJ: Erlbaum.

Ruble, D.N. (1988). Sex-role development. In M.H. Bornstein & M.E. Lamb (Eds.), *Social, emotional and personality development* (pp.441-460). Hillsdale, NJ: Lawrence Erlbaum Associates.

Slotboom, A., Havill, V., Pavlopolous, V. & De Fruyt, F. (1998). Developmental changes in personality descriptions of children: A cross-national comparison of parental descriptions of children. In G.A. Kohnstamm, C.F. Halverson, Jr., I. Mervielde & V.L. Havill (Eds.), *Parental descriptions of child personality* (pp. 127-153). Mahwah, NJ: Lawrence Erlbaum Associates.

Thomas, A. & Chess, S. (1977). *Temperament and development*. New York: Brunner/Mazel.

Thomas, A. & Chess, S. (1982). Temperament and follow-up to adulthood. In R. Porter & G.M. Collins (Eds.), *Temperamental differences in infants and young children* (pp. 168-175). London: Pitman.

Zupančič, M. (1999a). *Mothers' free descriptions of their infants/toddlers.* Unpublished research report, University of Ljubljana, Slovenia.

Zupančič, M. (1999b). *The development of object-play in the first two years of a child's life.* Ljubljana, Lugano: i2, Centro Studi Universitari Internazionali.

Zupančič, M. (2000). Spoznavni razvoj v prvem letu življenja: izziv Piagetovi teoriji [Cognitive development in the first year of life: A challenge to Piaget's theory]. *Horizons of Psychology, 9 (2),* 7-32.

Zupančič, M., Gril, A. & Kavčič, T. (2000). The Slovenian version of the Social Competence and Behavior Evaluation Scale – Preschool Edition (OLSP): The second preliminary validation. *Horizons of Psychology, 9 (4),* 7-23.

Appendix

Table 2a: Frequencies of Father's and Mother's Descriptors per Category and Tests of Differences by the Child's Gender and Age

Category	Father B/G	χ^2 (df=1)	Mother B/G	χ^2 (df=1)	Father I/T	χ^2 (df=1)	Mother I/T	χ^2 (df=1)
Total	365/276	0.03	493/384	0.26	244/397	11.71**	372/505	4.62*
Total+	300/238	0.30	411/315	0.10	204/334	10.15**	308/418	3.82
Total-	65/38	0.69	82/69	0.30	40/63	1.59	64/87	0.81
I	127/87	0.16	154/125	0.28	94/120	0.56	133/146	0.00
I+	111/84	0.01	141/118	0.47	84/111	0.78	124/135	0.01
I-	16/3	3.30	13/7	0.24	10/9	0.10	9/11	0.03
II	80/49	0.57	97/68	0.06	42/87	6.02*	55/110	6.90**
II+	48/30	0.27	64/33	1.50	26/52	3.26	30/67	5.60*
II-	32/19	0.30	33/35	1.08	16/35	2.79	25/43	1.61
III	18/14	0.01	32/22	0.04	6/26	5.98*	14/40	5.42*
III+	17/13	0.00	23/20	0.14	5/25	6.55*	10/33	5.54*
III-	1/1	/	9/2	/	1/1	/	4/7	0.28
IV	21/22	0.64	32/32	0.71	17/26	0.56	27/37	0.37
IV+	13/14	0.47	24/22	0.26	11/16	0.25	21/25	0.03
IV-	8/8	0.18	8/10	0.61	6/10	0.33	6/12	0.75
V	67/54	0.10	87/60	0.09	40/81	5.26*	58/89	1.95
V+	66/53	0.09	84/59	0.05	39/80	5.39*	55/88	2.40
V-	1/1	/	3/1	/	1/1	/	3/1	/
VI	6/11	1.64	15/15	0.33	7/10	0.14	10/20	1.25
VI+	5/10	1.77	13/14	0.47	5/10	0.63	8/19	1.82
VI-	1/1	/	2/1	/	2/0	/	2/1	/
VII	5/2	/	3/2	/	2/5	/	0/5	/
VII+	5/2	/	3/2	/	2/5	/	0/5	/
VII-	0/0	/	0/0	/	0/0	/	0/0	/
VIII	8/3	/	10/7	0.01	4/7	0.28	8/9	0.00
VIII+	7/2	/	10/6	0.09	3/6	/	8/8	0.02
VIII-	1/1	/	0/1	/	1/1	/	0/1	/
IX	3/5	/	13/9	0.01	4/4	/	15/7	1.93
IX+	2/4	/	7/8	0.35	4/2	/	12/3	3.42
IX-	1/1	/	6/1	/	0/2	/	3/4	/
X	6/3	/	6/5	/	5/4	/	4/7	0.28
X+	5/3	/	5/5	/	5/3	/	4/6	/
X-	1/0	/	1/0	/	0/1	/	0/1	/
XII	10/15	1.52	21/20	0.32	11/14	0.06	22/19	0.31
XII+	9/14	1.54	20/17	0.09	10/13	0.08	20/17	0.32
XII-	1/1	/	1/3	/	1/1	/	2/2	/
XIII	6/5	/	7/5	0.00	1/10	4.00*	6/6	0.02
XIII+	6/4	/	7/4	/	0/10	/	5/6	0.01
XIII-	0/1	/	0/1	/	1/0	/	1/0	/
XIV	8/6	0.00	16/14	0.10	11/3	2.90	20/10	2.24
XIV+	6/5	/	10/7	0.01	10/1	4.86*	11/6	1.02
XIV-	2/1	/	6/7	0.33	1/2	/	9/4	1.26

Note: Fathers (*N* = 85); Mothers (*N* = 100); B/G = boys/girls (*N* = 58/43); I/T = infants/toddlers (*N* = 48/53); *p<0.05; **p<0.01; I = Extraversion; II = Agreeableness; III = Conscientiousness; IV = Emotional Stability; V = Openness/Intellect; Total I-V = Categories resembling FFM; VI = Independence; VII = Mature for Age; VIII = Health; IX = Rhythmicity; X = Gender Appropriate/Physical Attractiveness; XII = Contact Comfort; XIII = Family Relations; XIV = Ambiguous; + = positive descriptors; - = negative descriptors; /=not computed since all expected freq. were not at least 5

Table 3a: Frequencies of Father's and Mother's Descriptors per Subcategory and Tests of Differences by the Child's Gender and Age

Sub-category	Father B/G	χ^2 (df=1)	Mother B/G	χ^2 (df=1)	Father I/T	χ^2 (df=1)	Mother I/T	χ^2 (df=1)
IA	72/49	0.11	92/74	0.14	49/72	1.21	77/89	0.04
IA+	61/47	0.02	83/68	0.19	41/67	2.02	72/79	0.00
IA-	11/2	2.36	9/6	0.02	8/5	0.52	5/10	0.63
IB	14/14	0.31	14/19	1.49	16/12	0.52	15/18	0.03
IB+	14/14	0.31	14/19	1.49	16/12	0.52	15/18	0.03
IB-	0/0	/	0/0	/	0/0	/	0/0	/
IC	41/24	0.43	48/32	0.11	29/36	0.11	41/39	0.22
IC+	36/23	0.16	44/31	0.02	27/32	0.04	37/38	0.05
IC-	5/1	/	4/1	/	2/4	/	4/1	/
IIA	31/19	0.22	44/34	0.02	13/37	4.98*	26/52	3.26
IIA+	24/15	0.14	39/26	0.09	11/28	3.09	21/41	3.14
IIA-	7/4	/	5/8	0.94	2/9	2.15	5/8	0.22
IIB	48/30	0.27	52/33	0.25	29/49	1.71	29/56	3.16
IIB+	23/15	0.08	24/6	3.56	15/23	0.50	9/21	1.94
IIB-	25/15	0.22	28/27	0.47	14/26	1.29	20/35	1.41
IIC	1/0	/	1/1	/	0/1	/	0/2	/
IIC+	1/0	/	1/1	/	0/1	/	0/2	/
IIC-	0/0	/	0/0	/	0/0	/	0/0	/
IIIA	7/3	/	14/15	0.49	2/8	/	8/21	2.46
IIIA+	6/2	/	11/13	0.65	1/7	/	7/17	1.71
IIIA-	1/1	/	3/2	/	1/1	/	1/4	/
IIIB	0/1	/	0/1	/	0/1	/	0/1	/
IIIB+	0/1	/	0/1	/	0/1	/	0/1	/
IIIB-	0/0	/	0/0	/	0/0	/	0/0	/
IIIC	11/10	0.11	18/6	1.66	4/17	3.83	6/18	2.63
IIIC+	11/10	0.11	12/6	0.33	4/17	3.83	3/15	3.93*
IIIC-	0/0	/	6/0	/	0/0	/	3/3	/
IVA	13/13	0.29	20/22	0.81	13/13	0.03	19/23	0.04
IVA+	6/6	0.13	13/13	0.29	8/4	0.90	14/12	0.21
IVA-	7/7	0.16	7/9	0.60	5/9	0.40	5/11	0.89
IVB	2/4	/	4/4	/	0/6	/	1/7	/
IVB+	2/4	/	4/3	/	0/6	/	1/6	/
IVB-	0/0	/	0/1	/	0/0	/	0/1	/
IVC	6/5	/	10/7	0.01	4/7	0.28	9/8	0.10
IVC+	5/4	/	7/6	0.03	3/6	/	6/7	0.01
IVC-	1/1	/	3/1	/	1/1	/	3/1	/
VA	27/26	0.45	41/30	0.00	24/29	0.05	39/32	0.78
VA+	26/25	0.43	39/30	0.01	23/28	0.06	37/32	0.52
VA-	1/1	/	2/0	/	1/1	/	2/0	
VB	13/12	0.15	13/18	1.49	5/20	4.24*	7/24	4.24*
VB+	13/12	0.15	13/17	1.19	5/20	4.24*	6/24	5.08*
VB-	0/0	/	0/1	/	0/0	/	1/0	/
VC	27/16	0.26	33/12	2.52	11/32	4.46*	12/33	4.20*
VC+	27/16	0.26	32/12	2.27	11/32	4.46*	12/32	3.85*
VC-	0/0	/	1/0	/	0/0	/	0/1	/

Note: Fathers (*N* = 85); Mothers (*N* = 100); B/G = boys/girls (*N* = 58/43); I/T = infants/toddlers (*N* = 48/53); * p<0.05; **p<0.01; IA = Sociability; IB = Dominance; IC = Activity; IIA = Amiability; IIB = Manageability; IIC = Honesty; IIIA = Carefulness; IIIB = Dependability; IIIC = Diligence; IVA = Reactivity; IVB = Self-confidence; IVC = Anxiety; VA = Openness to Experience; VB = Interest; VC = Intelligence; + = positive descriptors; - = negative descriptors; / = not computed since all expected frequencies were not at least 5