

HOW CHILDREN VIEW THEMSELVES AND THE WORLD? CHALLENGES OF PSYCHOLOGICAL MEASUREMENT

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When we study a large number of various phenomena, we could ask when and how they develop, how they change with age, whether they are the same in children and adults? When we try to investigate those phenomena in children, we face several issues. First of all, the question is whether we could talk about the same phenomenon or function in children as in adults, do we study the same thing? Or at what age can a specific aspect be meaningfully studied? And what are the age-specific characteristics of the studied phenomenon? This will be the overarching question of the papers presented in this symposium, from the angles of cognitive, social, and personality psychology. Even if a single feature is the same, the relation between different functions in children can be different than in adults, as we will see in the first paper of this symposium. Further, if we use the same methodology to research, how can we know how children understand and interpret the whole situation, the experimental design, or words in the questionnaire items? Concept development in children shows that children could use the same terms as adults, but with a different sense, as pseudo-concepts. That means that our items will have a different meaning for them, so we will not assess what we aimed for. Social relations change with age, so is the case with the relationship between children as subjects and the investigator, which may be different from the relationship between an adult and the experimenter. The same is true of the relationship of children of different ages to the experimental procedure. For example, post-Piaget researchers show that children interpret the experimenter's intentions and what is expected of them and that their responses reflect those aspects rather than their cognitive characteristics. However, as we can see in the second paper of this symposium, it is possible to modify or develop a procedure that will be suitable for very young children. In the third presentation, the authors will discuss some methodological issues in measuring ingroup favoritism in cooperation among children and adolescents. Finally, if we use the same instruments to study children and adults, we have to be certain that we have structural invariability. This enables a quantitative comparison of the results obtained in samples of different ages. We will discuss several conceptual and methodological issues when researching individual differences in children singled-out by papers in this symposium.

INDIVIDUAL DIFFERENCES IN THE DEVELOPMENT OF TIM-BASED VISUAL ATTENTION FOR OBJECTS IN MOTION

Zorana Zupan, Elisabeth Blagrove, Derrick G. Watson,

In time-based visual attention, visual search is facilitated if half of old, distracting objects are displayed before newly arriving objects, i.e., the preview benefit (Watson & Humphreys, 1997). This effect is obtained in adults for both static objects and objects in motion (Watson & Humphreys, 1997, 1998). It is currently unknown whether children display time-based visual attention with moving items and if this ties in with broader cognitive development, such as the development of executive functions. In a mixed design, 96 participants (24 per age group) aged 6, 8, 12 years and adults ($Mage = 19.20$, $SD = 2.21$) completed three visual search tasks: preview search, full-element, and half-element baselines with stimuli in motion. Individual differences in preview efficiency were also examined in relation to executive functions (switching, inhibition, switching and inhibition combined) measured via Shape School Extended (Espy, 1997; Ellefson, Blagrove & Espy, in prep.) and short-term verbal and spatial memory tasks from the Working Memory Test Battery for Children (Pickering & Gathercole, 2001). The results showed that on average, all age groups prioritized newly arriving items in motion, all $F_s > 5.06$, all $p_s < .05$ and showed no differences in preview search efficiency, $F(3,88) = 1.49$, $p = .221$. However, an inspection of individual differences suggested that 38% 6-year-olds, 21% 8-year-olds, 4% 12-year-olds, and 16% of adults did not display this effect measured via the preview efficiency index. In 6-year-olds, associations emerged between inhibition and preview efficiency indices for small display sizes, $r(17) = .615$, $p < .001$ and in adults, between switching and inhibition combined and preview efficiency indices for large display sizes, $r(21) = .448$, $p < .001$. Findings suggest that although on a general level all groups obtained a preview benefit with moving items, at an individual level a number of participants did not display the effect, most notable in 6-year-olds, suggesting a possible developmental trend. There were some indications of relationships between time-based visual attention for moving items and executive functions, namely inhibition, albeit with different patterns across age groups, suggesting a potential shift in mechanism - inhibition and the preview benefit for small number of moving items at the age of 6 towards a combination of switching and inhibition and the preview benefit for a large number of moving items at an adult age.

TAILORING PROCEDURES TO MEASURE GENDER STEREOTYPING AND GENDER POLICING IN PRESCHOOLERS

Milica Skočajić, Milica Okičić, Jovan Radosavljević, Ivana Janković, Iris Žeželj

There is strong empirical evidence that children associate gender labels and activities, toys or occupations, i.e. adopt gender stereotypes, already at the age of three. There is less research on how early they start to “gender police”, i.e. to sanction counter-stereotypical behaviors of peers, although there are indications that it follows the stereotype adoption. For such an early age, standard questionnaires are not an option; therefore, researchers typically use visual stimuli and interviewing. In addition, they need to make sure that every particular child’s abilities allow them to follow the procedural requirements: the stereotyping task is essentially a classification task, and the sanctioning behavior task entails answering hypothetical questions and might be sensitive to perspective-taking abilities. We compared younger and older boys and girls using a two-task procedure: (a) stereotyping task – categorization of pictures of masculine/feminine colors, toys, and objects as more suited for boys/girls or both and (b) sanctioning task – evaluation of boys/girls playing with gender counter-stereotypic toys. A total of 100 children (3-4 or 6-7 year-olds), were individually interviewed with respect to their readiness and ability to participate. Results show that, although all three sets of stimuli were stereotyped, toys were stereotyped more than colors and objects. Overall stereotyping was more frequent in the older group ($F(1, 96) = 9.66, p < .001, \eta_p^2 = .09$). Gender differences were more complex: boys stereotyped masculine stimuli more often than girls did ($F(1, 49) = 20.93, p < .001$); the older boys, but not the other groups, sanctioned counter-stereotypical behavior more often than accepted it (boys’ behaviors: $F(1, 95) = 5.98, p = .016, \eta_p^2 = .059$; girls’ behaviors: $F(1, 95) = 3.98, p = .049, \eta_p^2 = .04$.); boys’ behaviors were sanctioned more often than girls’ ($F(1, 96) = 4.96, p = .028, \eta_p^2 = .05$). Finally, stereotyping and sanctioning were strongly positively related ($R(1, 96) = .38, p < .001$). Findings suggest that, very early on, children are not only aware of gender norms, but also ready to sanction peers violating them, and that these tendencies grow stronger with age. Future research should explore the relation between gender stereotyping and multiple classification abilities as well as the Theory of Mind adoption stage. The procedures we developed proved suitable for very young children and could be a useful tool for researchers in the field.

MEASURING INGROUP FAVORITISM IN COOPERATION AMONG CHILDREN AND ADOLESCENTS: META-ANALYTIC INSIGHTS

Aleksandra Lazić, Danka Purić, Ksenija Krstić

Theory suggests that individuals tend to favor social groups to which they belong (ingroups) over social groups to which they do not (outgroups). In domain of economic behavior, adults have been found to exhibit a small but consistent preference to incur a

personal cost to benefit ingroups, compared to outgroups. However, evidence to support ingroup favoritism in cooperation in childhood and adolescence is scattered. Moreover, experimental economics research with children and adolescents sometimes differs in procedural and design details from research with adults. We meta-analyzed a recent explosion of economic experiments (2008–2017) that have explored ingroup favoritism in cooperative decision-making across ages before adulthood. We searched a number of databases from their earliest record to November 2017 by title, abstract, and keywords for the following search string: Population-Term (referring to children and adolescents) AND Bias-Term (referring to both ingroup and outgroup bias) AND Game-Term (referring to specific economic games). We used Cohen's d as the measure of the difference in cooperation between ingroup and outgroup. If cooperation means and standard deviations were not provided, we derived Cohen's d from an F score (for one effect size) or from rates of cooperative behavior (for 22 effect sizes). The systematic literature search resulted in 14 papers, reporting 62 effect sizes in a total sample of 4,817 participants, aged between 3 and 19 years. The random-effects model revealed a small overall effect size indicating that children and adolescents were more cooperative towards ingroups than towards outgroups, $d = 0.12$, 95% CI [.01, .24], $k = 47$, $p < .05$. We also conducted single-moderator analyses to test for several conditions that might have influenced this effect, namely participant age and gender, the setup of the cooperation task (dictator game, ultimatum game, trust game, prisoner's dilemma), the type of rewards that were exchanged (monetary vs non-monetary), study design (between- vs within-subjects), and the nature of the group membership (natural vs experimental). Based on our data, we will provide an overview of the different methods used in the studies we sampled and discuss the study characteristics used as moderators in our meta-analysis. We will address the pros and cons of the methods to run economic experiments with children and adolescents and, in light of the meta-analytic findings, suggest directions for future studies.

THE DEVELOPMENT OF CONSCIENTIOUSNESS SCALE: MEASURING PERSONALITY TRAITS IN MIDDLE CHILDHOOD CHILDREN

Sara Dojčinović, Maša Milanović, Vanja Pantović, Marija Gmitrović, Emilija Milisavljević, Marija Petrović

Authors reached a consensus on broad, higher-order personality traits in adults, but the question of the applicability of the established personality models to children, and consequently, the issue of the measurement of children's personality traits still remains. The goal of this study was the development and validation of a rating scale for assessment of HEXACO Conscientiousness – C trait in children. We specifically focused on middle childhood children (aged 7, 8 and 9). The pilot questionnaire consisted of 83 items and

was completed by 104 respondents (87.5% mothers). Item selection criteria were based on the IRT model reliability, fit, separation and item difficulty. Additionally, we explored corrected item-total correlations, principal component loadings, and the psychometric characteristics of the items using RTT10G. The final instrument consisted of 40 items, 10 items mapping each of the four facets of HEXACO C – Organization, Diligence, Perfectionism and Prudence. The sample of 264 children was rated, specifically, 215 were ratings by mothers and 125 were ratings by fathers (76 of which were paired, ratings of the same child by both of the parents). Using exploratory factor analysis (ML method with Promax rotation) four facets were extracted in both mothers' and fathers' ratings, i.e., Organization, Perfectionism, Diligence, and Prudence. A higher-order C factor was extracted in both groups. To estimate the similarity of the factors extracted from mothers' and fathers' ratings orthogonal procrustes rotation was done. Congruence was 1.0, while for facets estimates were the following: .67 (Organization), .87 (Diligence), .70 (Perfectionism), .75 (Prudence). Results suggest that obtained factor structures deviate to some extent from the one proposed by the HEXACO model. We examine discrepancies between mothers' and fathers' ratings in facets. Additionally, we discuss conceptual and practical challenges when assessing personality traits in children.

DEVELOPMENTAL STABILITY OF SEVEN-FACTOR PERSONALITY STRUCTURE

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The vast majority of studies investigating personality structure is done using adult samples. If personality is assessed in children, parental ratings are preferably used method, while self-reports are seldom used. Here we use self-report measures to study the developmental stability of the seven-factor personality structure defined by the HEXACO model and Disintegration trait. We focus on middle childhood children, young teens, and teenagers. Sample consisted of four groups: 1) age 10-11 (N=164, 49.4% female), 2) age 12-13 (N=195, 48.9% female), 3) age 14-16 (N=319, 59.2% female), 4) age 17-18 (N=201, 49.5% female). Data were collected in several elementary and high schools in Serbia and Montenegro. Personality traits were assessed using 60 items HEXACO, and 20 items DELTA questionnaires. The stability of the seven-factor personality structure was tested using Orthogonal procrustes rotations, and the analysis was done on facets of all seven personality traits. Congruence coefficients and factor loadings were calculated for all facets for all six pairwise comparisons. Overall, the average congruence of factors ranged between .69 (Emotionality) and .96 (Disintegration). The average congruence of facets ranged between .41 (Sincerity) and .95 (Sentimentality), with the majority of facets having average congruence above .85. Average factor loadings for Disintegration range between .55 (Depression) and .85 (Perceptual Distortions), for Honesty between .20 (Sincerity) and

.39 (Greed avoidance), for Emotionality between .19 (Anxiety) and .53 (Sentimentality), for Extraversion between .34 (Sociability), and .47 (Social self-esteem and Liveliness), for Agreeableness .34 (Patience), and .54 (Flexibility), for Conscientiousness .33 (Organization) and .53 (Diligence), and for Openness .53 (Creativity) and .67 (Inquisitiveness). As expected, personality structure is least stable in the first age group but stabilizes in groups 3 and 4. We discuss, in detail, stability and content of personality factors on different age groups, and practical implications on assessment these results have.