Current Status and Challenges in the Assessment of the Personality Trait Spectrum in Youth

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Developments in the assessment of general and maladaptive personality traits in children and adolescents have been reviewed in the present paper, with an emphasis on instruments based on the Five-Factor Model (FFM), such as the Hierarchical Personality Inventory for Children (HiPIC; Mervielde & De Fruyt, 1999), which describes general traits, and the Dimensional Personality Symptom Item Pool (DIPSI; De Clercq, De Fruyt, Van Leeuwen, & Mervielde, 2006), which accounts for maladaptive traits. We have additionally discussed measures available in Japanese, to assess traits in children, adolescents, and adults, and pertaining issues in cross-cultural personality research, especially with respect to Western and Asian differences. Finally, a number of key implementation areas for personality assessment have been identified, together with some challenges for this promising field of research.

**Key words:** personality assessment, Five-Factor Model, childhood, adolescence, HiPIC, DIPSI, personality pathology

**Introduction**

Although individual differences in the typical way toddlers and young children think, feel, and behave have been acknowledged in psychology for about half a century, their systematic study has been hampered by a bifurcated research field, where some researchers conceived such early differences as manifestations of temperament, whereas others studied these dispositional differences under the umbrella of personality traits (Mervielde & Asendorpf, 2000). Given an orientation on early differences and their impact on development, historically, temperament researchers have been strongly affiliated with developmental psychology, whereas personality researchers mainly focused on the study of dispositional differences in adulthood, publishing their findings in personality journals.

Over the past decades, personality trait researchers have achieved a strong consensus that personality differences observable in adults can be best described along five primary dimensions, also called the Big Five, or the dimensions of the Five-Factor Model (FFM). Neuroticism (or its opposite pole, Emotional Stability) refers to individual differences in negative emotionality, whereas the dimensions of extraversion and agreeableness tap into differences in the frequency

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1) This paper is largely based on a keynote lecture provided by the first author at the 22th Conference of the Japanese Society of Personality Psychology on October 12, 2013 in Chiba at the Edogawa University.
and quality of social interactions, respectively. Openness to experience is the dimension referring to a curious and open approach versus being more closed or narrow-minded and down-to-earth, whereas conscientiousness represents individual differences in ambition and self-discipline, and being methodical, organized, and orderly. Different operationalizations of the FFM became available in the past years (De Raad & Perugini, 2002), with the NEO Personality Inventory-Revised (NEO-PI-R; Costa & McCrae, 1992), a flagship operationalization assessing the five domains, supplemented with 30 facets. A considerable volume of research with the NEO-PI-R has supported the applicability of the FFM across various cultures (McCrae & Terracciano, 2005), informants (McCrae et al., 2004), and referred and non-referred populations, and most recently, also for adolescence, with the availability of the NEO-PI-3 (De Fruyt, De Bolle, McCrae, Terracciano, & Costa, 2009).

**General Trait Models for Childhood and Adolescence**

The Big Five was also found valid for describing the personality of children and adolescents. The seminal work of Digman (1963), examining teacher ratings of school children on a set of trait adjectives and brief behavioral descriptors, provided initial evidence on the validity of the Big Five. Almost three decades later, John and colleagues (1994) proposed the ‘Little Five’ personality factors, but also found evidence for two additional factors derived from maternal California Child Q-sort (CCQ; Block & Block, 1980) ratings. These additional factors of “irritability” and “positive activity” could probably be best interpreted, in hindsight, as CCQ-specific dimensions, because subsequent work by Mervielde, Buyst, and De Fruyt (1995) and the International Consortium for the Study of the Developmental Antecedents of the Five-Factor Model (ICDA-FFM; Kohnstamm, Halverson, Mervielde, & Havill, 1998) could not replicate these supplementary factors. However, they did find evidence for the robustness of the FFM. John and colleagues (1994) further examined the associations between these little five and Achenbach’s (1991) dimensions of internalizing and externalizing psychopathology, providing first evidence that the FFM personality traits could be aligned with broad dimensions of psychopathology in pre-adulthood (De Fruyt & De Clercq, 2014a).

These initial findings have been supplemented and replicated (Mervielde et al., 1995), though personality ratings were still provided by adults with children as target individuals. Thus, the observed structure could still be in the eye of the beholder. Most studies conducted before 1995 assessed personality in children or adolescents using adjective lists or inventories developed for adults, and hence prestructured the resulting factor solution. Finally, these item sets did not reflect age-specific behavior, preventing the emergence of childhood specific personality dimensions or facets.

The lexical approach to personality description (De Raad, 2000) provided a convincing rationale for the development of a comprehensive child and adolescent personality taxonomy. Mervielde and De Fruyt (1999, 2002) adopted this approach to construct such taxonomy by assembling a large pool of parental personality descriptions of Flemish children aged between 6 and 13 years, by asking parents to describe what they found characteristic of their child (Kohnstamm et al., 1998).
Nearly 10,000 of the descriptors were collected and sorted in a personality descriptive lexicon with 14 major categories, including the Big Five and specific temperament categories. These categories were further split into approximately 100 homogeneous personality descriptive content categories. The content embodied within these categories was represented by 2 to 3 personality items, and this item set was subsequently administered to large samples of parents and teachers, who were requested to rate their children (aged 6 to 12 years). An analysis of the factor structure clearly pointed towards five factors that could be labeled as extraversion, benevolence, conscientiousness, emotional stability or neuroticism, and imagination.

Mervielde and De Fruyt (1999, 2002) additionally examined the lower-level structure and identified 18 traits that were unequally distributed across the main factors. They subsequently constructed the Hierarchical Personality Inventory for Children (HiPIC; Mervielde & De Fruyt, 1999; Mervielde, De Fruyt, & De Clercq, 2009), with 5 domain factors and 18 facets, each assessed by 8 items. The emotional stability domain included two facets, i.e., anxiety and self-confidence, whereas the extraversion domain entailed four facets: energy, expressiveness, optimism, and shyness. Imagination grouped the facets of creativity, intellect, and curiosity. Benevolence captured altruism, dominance, egocentrism, compliance, and irritability, whereas conscientiousness entailed four facets: concentration, perseverance, orderliness, and achievement striving.

Some of the HiPIC domain labels differ somewhat from the lexicon of the adult Big Five (Goldberg, 1993). Specifically, the HiPIC dimensions of extraversion, conscientiousness, and emotional instability refer to content similar to their adult Big Five counterparts, and hence were named alike. However, the HiPIC benevolence factor refers to a broader set of traits than the agreeableness factor of the adult Big Five, because the former includes traits linked to the ‘easy-difficult’ child concept described in the temperament literature (Thomas, Chess, Birch, Herzig, & Korn, 1963). Thus, the benevolence factor refers to differences in the manageability of the child from the perspective of the parent-informant. Further, the HiPIC imagination domain comprises both intellect and openness to experience items, blending the two alternative labels for the fifth factor emerging from adult adjective-based lexical studies (Goldberg, 1993) and the questionnaire-oriented FFM approach (Costa & McCrae, 1992). Given its construction background, comprehensiveness, and empirical justification for its facet structure, the HiPIC can be considered as a more sensitive measure to assess personality and normative personality development at young age (De Clercq, De Fruyt, & Van Leeuwen, 2004). Beyond the HiPIC, alternative Big Five oriented measures for the assessment of traits in youth have been developed, such as the Big Five Inventory-C (BFI; John, Donahue, & Kentle, 1991) and the Inventory for Child Individual Differences (Halverson et al., 2003). An extensive overview of the available measures for childhood and adolescence has been recently compiled by Shiner (2007) and De Fruyt and De Clercq (2013).

**Maladaptive Personality Trait Models for Youth**

The evolution of the study of maladaptive traits in childhood and adolescence has been similar to that of the study of general personality, by initially
importing DSM-IV Axis II based measures constructed for adults into adolescence. For example, the item set of the Shedler-Westen Assessment of Personality inventory (SWAP) was adapted in the SWAP-A (Westen, Dutra, & Shedler, 2005) so it became useful for adolescents, and also the items used in the landmark Children-in-the-Community study (CIC; Cohen, Crawford, Johnson, & Kasen, 2005) were modeled after the Axis II symptoms defined for adults.

Likewise, dimensional models to describe personality pathology in adulthood, that have been proposed as alternatives for categorical Axis II disorders, were used with adolescents unadapted, or with minor language modifications. For example, the Dimensional Assessment of Personality Pathology-Basic Questionnaire (DAPP-BQ; Livesley, 1990; Livesley, Schroeder, & Jackson, 1992), assessing emotional dysregulation, disso-
cial behavior, inhibition, and compulsivity, together with 18 more specific maladaptive traits, has been recently used, without modifications, with community and referred groups of adolescents (Aelterman, Decuyper, & De Fruyt, 2010; Du et al., 2006; Krischer, Sevecke, Lehmkuhl, & Pukrop, 2007). Similarly, Tromp and Koot (2008) enhanced the readability of the DAPP-BQ items for adolescents, by replacing the difficult or uncommon words with synonyms from a children’s dictionary, adapting 36% of the items, and slightly amending the instructions. The psychometric characteristics of the DAPP-BQ were clearly preserved in a combined sample of referred (N=170) and non-referred (N=1,628) adolescents.

Similar disadvantages of such top-down research, like for general personality assessment, apply to maladaptive trait measures used in adolescence or childhood, first precluding the emergence of a different structure or new major trait factors or facets that may be valid for adolescence. Secondly, and most importantly, all item content to describe personality pathology at younger ages is explicitly bound to the Axis II symptoms enclosed in DSM-IV (De Clercq, De Fruyt, & Widiger, 2009; Shiner, 2007; Widiger, De Clercq, & De Fruyt, 2009). Given the numerous problems associated with the conceptualization of the DSM-IV personality disorders, it was recommended to consider alternative ways to delimit the range of indicators of personality dysfunction in childhood and adolescence.

In contrast to the previous top-down strategy in which personality pathology inventories developed for adults were used unadapted, or slightly adapted, to assess children and adolescents, De Clercq and colleagues (2006) employed a bottom-up approach to compile a comprehensive set of maladaptive trait items applicable to denote disturbances in personality functioning in childhood. The observation that extreme positions on general traits in adulthood are indicative of personality dysfunction, and the notion that the broad range of personality disorder symptoms is not entirely covered by general trait measures (Clark, 2007), formed two guiding principles for item writing and compilation. Applying the first principle, De Clercq et al. (2006) developed a set of complementary items that represented more extreme and/or maladaptive content for four dimensions of the HiPIC (Mervielde & De Fruyt, 1999; Mervielde et al., 2009), excluding the imagination domain. Following the second principle, the item set was further compiled with items from Axis II personality disorder inventories applicable to children, including the Assessment of DSM-IV
Personality Disorders (ADP-IV) and the SCID-II (First, Gibbon, Spitzer, Williams, & Benjamin, 1997). The resulting item set, referred to as the Dimensional Personality Symptom Item Pool (DIPSI; De Clercq, De Fruyt, & Mervielde, 2003), included 172 items, and was subsequently presented to large groups of parents of non-referred and referred children. The higher-order structure was formed by four major dimensions, which further unfolded into 27 reliable and homogeneous lower-level traits. The higher-order dimensions of disagreeableness, emotional instability, introversion, and compulsivity, showed consistent conceptual and structural similarities with the personality pathology dimensions that have been described for adults (O’Connor, 2005; Saulsman & Page, 2004; Widiger & Simonsen, 2005). The lower-order facets are to be interpreted as maladaptive extremes of general lower-order traits (Widiger et al., 2009), but they also provide an additional and more differentiated description of pathological features, not fully accounted for by general trait or temperament models (De Clercq, De Fruyt et al., 2009).

Support for the construct and discriminant validity of the DIPSI was provided by a series of studies that examined associations between DIPSI dimensions and facets, and the broad dimensions of psychopathology, such as internalizing and externalizing symptoms in childhood and adolescence (De Clercq, Van Leeuwen, De Fruyt, Van Hiel, & Mervielde, 2008), as well as described distinct clinical patterns, including autism spectrum disorders (De Clercq et al., 2010), obsessive-compulsive personality disorder symptoms (Aelterman et al., 2010), and borderline personality disorder features in adolescence (De Clercq, Decuyper, & De Caluwé, 2014). These studies suggested that a substantial part of the symptoms across the different diagnostic labels are trait-related. The findings additionally showed that general trait models have to be complemented by more maladaptive items, to enable a more comprehensive description of the personality pathology variance. In addition to diagnostic specificity, there was further evidence for continuity of the DIPSI dimensions (De Clercq, Van Leeuwen, Van den Noortgate, De Bolle, & De Fruyt, 2009).

The DIPSI has been recently further expanded with a module tapping into the domain of odd, eccentric, and schizotypal behaviors, to provide a more comprehensive account of personality difficulties in youth (Verbeke & De Clercq, 2014). It can be expected that this expanded coverage of the trait domain, will provide a better account of the observed co-occurrence of diagnostic categories, including odd and eccentric symptoms such as those observed in early schizophrenia, autism spectrum disorder, cluster A personality pathology, dissociation, tic disorder, and obsessive-compulsive personality disorder (Verbeke & De Clercq, 2014). In addition, this extended DIPSI model provides an alternative for the current DSM-5 trait model for personality pathology to describe maladaptive traits in adolescence (Krueger, Derringer, Markon, Watson, & Skodol, 2012).

Asian and Western Personalities

Even within Western cultures, it is unclear if the Big Five are the core dimensions, see for example, the alternative dimensional models such as the HEXACO model (Ashton et al., 2004), which distinguishes an additional Honesty–Humility factor in addition to the FFM dimensions. Similarly,
Paunonen and Jackson (2000) suggested a series of individual difference factors that are seemingly difficult to represent within the FFM framework. While these alternative models do not question the importance of the Big Five within North-American and Western-European populations, they call for an extension of the model. However, current-day cross-cultural personality research involves a hot debate on whether these Big Five factors replicate across cultures, and whether factors other than the Big Five are necessary to describe personality differences in particular cultures.

There is now considerable evidence that, when transported to another culture, the Big Five factors can be easily retrieved. Schmitt and colleagues (2007), for example, could retrieve the five-factor structure when the BFI was translated from English, into 28 different languages, and administered to 17,837 individuals from 56 countries. Likewise, McCrae and colleagues (2005) found support for the FFM structure when analyzing college-students’ NEO-PI-R descriptions (N = 11,985) of college-aged (18–21 years) and adult (> 40 years) individuals from 50 nations. De Fruyt et al. (2009) provided similar evidence by analyzing descriptions of adolescents (12–17 years) obtained from 24 cultures. Moreover, Yamagata et al. (2006) demonstrated that five phenotypic and genetic factors were extracted for each twin sample from Canada, Germany, and Japan, by using the NEO-PI-R, and that high congruence coefficients were observed when phenotypic and genetic factors were compared across samples, suggesting that the universality of the FFM is due to genetic influences that are invariant across the three twin samples.

Other researchers, however, reported difficulties in retrieving specific factors of the FFM, or suggested slightly different factors than those observed in Western research, when approaching the study of personality via more indigenous or bottom-up approaches rooted in individual cultures. For instance, Cheung and colleagues (2001) jointly examined the structure of the NEO-PI-R and the Chinese Personality Assessment Inventory (CPAI; Cheung et al., 1996), and provided clear evidence for neuroticism, conscientiousness, agreeableness, and extraversion, with a separate ‘interpersonal relatedness’ factor, as well as three openness facets (O3: Feelings, O2: Aesthetics, and O1: Fantasy) that chiefly loaded an openness component. The additional interpersonal relatedness factor was exclusively loaded by CPAI scales, including Optimism versus Pessimism, Ren Qing (relationship orientation), Flexibility, Defensiveness (Ah-Q mentality), Harmony, Face, and Logical versus Affective Orientation. Across three different samples, this additional factor could not be substantially absorbed by the NEO-FFI factors, with explained variances by the FFM ranging from .08 (Ren Qing; sample of 372 Chinese managers) to .31 (Flexibility; same sample).

Impressive bottom-up work using the lexical approach of personality description, to derive the basic dimensions of personality from a range of local vocabularies, has been conducted in South Africa. In the course of the development of the South African Personality Inventory (SAPI), based on data from semi-structured interviews conducted with 1,216 persons representing the 11 language groups in South-Africa, Nel et al. (2012) grouped the personality descriptive language into 9 broad content-based clusters: conscientiousness, emotional stability, extraversion, facilitating,
integrity, intellect, openness, relationship harmony, and soft-heartedness. The clusters that were suggested beyond the Big Five were related to the social-relational functioning, and tapped into maintaining positive relationships with others. Thus, these could be conceptually related to the agreeableness factor. In a series of follow-up studies, Valchev and colleagues (2014) found that the social-relational scales of SAPI formed two additional factors beyond the Big Five, assessed by the Basic Traits Inventory (BTI; Taylor & De Bruin, 2005), relying on items from the International Personality Item Pool (IPIP; Goldberg et al., 2006). Besides these additional factors, blacks scored higher than whites on the positive social relational factor (defined by facilitating, integrity, relationship harmony, active support, and empathy) and the social-relational concepts explained substantial variance in prosocialness beyond the Big Five (increasing from .37 to .58). Finally, there was evidence that the seven factor-structure could be also retrieved from a joint factor analysis of 50 IPIP items and SAPI social relational scales administered to a mixed sample of 452 mainstream Dutch; 427 Western; 225 Antillean, Surinamese, and Indonesian; and 179 non-Western participants.

Japanese researchers, on the other hand, found the same five-factor structure by using the original Japanese personality scales, which have been developed, translated, or adapted from the FFM. Wada (1996) developed the Big Five Scales (BFS) on the basis of the Adjective Check List (ACL; Gough & Heilbrun, 1983). Subsequently, the BFS consists of five factors with 12 unipolar scales for each factor (60 items in total), and aligns with the 100 trait descriptive adjectives (TDA) developed by Goldberg (1992). For example, Extraversion in the BFS includes extraverted, talkative, energetic, and quiet, which are also included in the TDA. The Five-Factor Personality Inventory for Children (FFPC) was also originally developed in Japan (Soga, 1999). The author constructed the scale based on the Yatabe-Guilford personality inventory (Tsujioka, 1965) and the Five Factor Personality Questionnaire (FFPQ; Tsuji, 1998).

Although the FFPC has shown moderate reliability and validity for samples of Japanese children, to our knowledge, this scale has never been used in cross-cultural studies. Japanese personality psychologists are further encouraged to adapt international instruments like the BFI (John & Srivastava, 1999) for adults, and the HiPIC for children (Mervielde & De Fruyt, 1999), to examine whether their factor structures are replicable, or that they need to be amended or extended.

In sum, evidence for the cross-cultural transportability of the Big Five is substantial, but there may be additional dimensions necessary to provide a structural representation of personality in particular cultures. The discussion on structural replicability has been further blurred by arguments on the importance of factors across cultures. Structural replicability does not imply that the factors have equal importance across cultures. For example, more collectivistic cultures may put higher value on Agreeableness, whereas more individualistic cultures, underscoring individual achievements, may consider traits associated with standing out of the group, such as assertiveness and achievement striving, as more significant than Extraversion and Conscientiousness. Despite these weighting differences, the FFM may be structurally replicable in both cultures.

In addition to these structural concerns, there is also a lively debate on measurement equivalence.
for specific operationalizations of the Big Five (Church et al., 2011), a requirement for evaluating mean-group differences within (e.g. across age or gender) or across cultural groups. For example, Schmitt et al. (2007), when comparing self-reported BFI averages of 10 World regions, found that when aggregating across individuals within cultures, Japan’s level of neuroticism was very high, but also that East-Asians scored lowest on conscientiousness, whereas Africans obtained the highest scores on it. The authors concluded that it is unlikely that raters would perceive Japanese as low on conscientiousness, and suggested that for some factors, and in some cultures, culturally endorsed response styles may account for such effects (Schmitt et al., 2007).

Future Prospects

The above review has shown that developmental personality research has a relatively short, albeit rich history. Contemporary personality researchers underscore that traits and their manifestations demonstrate both continuity and plasticity across the life course (De Fruyt & Van Leeuwen, 2014). Rather than discussing whether the glass is half full or half empty, present-day investigators are not only interested in how stability of traits is maintained, but they also describe normative change patterns and study individual deviations thereof (Denissen, 2014). While the previously reviewed work is nomothetic in nature, considerable progress has also been made in developmental personality psychology, which adopts a more person-centered approach toward personality description, examining the nature of trait configurations within the individual, their longitudinal course, and validity to predict problem behavior (De Haan, Deković, Van den Akker, Stoltz, & Prinzie, 2013; Van den Akker, Deković, Asscher, Shiner, & Prinzie, 2013). This person-centered research in childhood and adolescence has been conducted using both general (Van Leeuwen, De Fruyt, & Mervielde, 2004) and mal-adaptive (De Clercq, Rettew, Althoff, & De Bolle, 2012) trait models.

The rising field of personality development research in childhood and adolescence faces multiple challenges, including the need to develop an overarching theoretical framework on how personality (development) is related to significant outcomes. First attempts in this direction have been outlined by De Fruyt and De Clercq (2014b) and Durbin and Hicks (2014) on the developmental course of personality and psychopathology. In addition to the study of the association with psychopathology, other significant outcomes are on the agenda, including the contribution of traits to academic achievements (Poropat, 2009, 2014), and the development of 21st century skills. These frameworks make also clear that longitudinal studies on personality development will have to pay extra attention to the assessment of environmental contexts and influences, including the family, peers (Reitz, Zimmermann, Hutteman, Specht, & Neyer, 2014), and the school contexts, to be in a better position to explain deviations from normative developmental patterns. Given that individuals are actively selected in contexts, and that they also manipulate contexts, environmental factors and traits are not independent, implying extra challenges for their assessment. Finally, very recent research efforts focus on the study of targeted personality change in the process of therapeutic interventions or coaching (Hudson & Fraley, in press). It will be interesting to learn from this work, to see if similar mecha-
nisms may be helpful to foster personality development in youth.

References


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