5. Creativity personality assessment

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"Four Ps of creativity" is the most widely influential formulation of organizing creativity research. It distinguishes the creative person, process, product, and press (i.e. environment) (Rhodes, 1961). The creative person branch refers to characteristics of the creator. As Rhodes (1961, p. 307) asserted, "the creative person covers information about personality, intellect, temperament, physique, traits, habits, attitudes, self-concept, value systems, defense mechanisms, and behaviour". The stable creativity-related personality traits mentioned here have been the focus of abundant creativity research. In this chapter, we will focus on the assessment of the creative personality, with these key concerns: (1) what are creative personality traits; (2) what are options for creativity personality assessment; and (3) what are the pros and cons of the available assessment options?

5.1 CREATIVE PERSONALITY TRAITS

Although empirical evidence of creative personality has been mostly provided since the 1950s, the early interest in creative personality can ascend to Plato and Aristotle. Earlier research on creative personality usually adopted biographical and historiometric approaches (see Kaufman et al., 2008) or various personality assessment tools to profile the personality traits of well-known, highly creative individuals, thereby summarizing common personality traits of highly creative individuals. These tools include California Personality Inventory (CPI; Gough, 1957), Minnesota Multiphasic Personality Inventory (MMPI), Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975), the Revised NEO Personality Inventory (Costa & McCrae, 1992), and the Ten-item Personality Inventory (TIPI; Gosling et al., 2003). Most studies used one of two major models of personality: *Eysencks' super-traits* (Eysenck & Eysenck, 1976, 1985) or the *five-factor model of personality* (or Big Five; Costa & McCrae, 1992).

5.1.1 The Super-Traits Model

The *Eysencks' super-traits model* proposes that personality is based on innate genetic factors from three dimensions: *extraversion*, *neuroticism*, and *psychoticism* (Eysenck & Eysenck, 1985). Individuals high in *psychoticism* tend to be "aggressive, cold, egocentric, impersonal, impulsive, antisocial, unempathetic, creative, and tough-minded" (Eysenck, 1993, p. 155). Eysenck (1993, 1995) asserted that the variation in *psychoticism* leads to individual differences in creativity. He also asserted that the unusual ideation (e.g. original or even taboo ideas) manifested by highly creative individuals results from overinclusive or illusive thinking, and quite loose associative network, which was commonly observed in psychopathology such as schizophrenia. Nevertheless, the empirical evidence turned out to be inconclusive (see details in Taylor et al., 2017). For instance, while Feist's (1998) meta-analysis of creative personality

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found both scientists and artists showed higher *psychoticism* (measured by the EPQ) than control groups, others observed no such correlation (Martindale & Dailey, 1996). A recent meta-analysis study demonstrated a weak relationship between *psychoticism* and creativity, which is independent of creative domains such as arts, science, writing, and general (Acar & Runco, 2012). Individuals with high *extraversion* tend to be "sociable, lively, active, assertive, sensation seeking, carefree, dominant, surgent, and venturesome" (Eysenck & Eysenck, 1985, p. 15). Individuals high in neuroticism can feel "anxious, depressed, guilt feelings, low self-esteem, tense, irrational, shy, moody, and emotional" (Eysenck & Eysenck, 1985, p. 15). Research using EPQ also demonstrated a positive correlation between *extraversion* and creativity (Feist, 1998; Martindale & Dailey, 1996), but rarely reported correlations between *neuroticism* and creativity. Even though Batey and Furnham (2006, p. 393) suggested that "*Neuroticism* provides artists with the emotional sensitivity to appreciate and express ideas with emotional content". More details about the relationships between *extraversion*, *neuroticism*, and creativity will be introduced in the following section.

The EPQ is designed to measure the abovementioned *extraversion*, *neuroticism*, and *psychoticism*. It also measures dissimulation tendencies (i.e. lying). In 1985, a revised version of EPQ (EPQ-R) was developed (Eysenck et al., 1985). The EPQ-R has 100 yes/no questions in its full version and 48 yes/no questions in its short version. Participants were asked to answer each question by putting a circle around the "YES" or the "NO" following the question. For instance, "Do you have many different hobbies?", or "Do you stop to think things over before doing anything?" (Eysenck et al., 1985).

5.1.2 The Big-Five Model

The *five-factor model of personality* has been widely used in studies on creative personality over the last two decades. This model supposes that there are five factors of personality: *openness to experience* (O), *conscientiousness* (C), *extraversion* (E), *agreeableness* (A), and *neuroticism* (N). Among these factors, *openness to experience*, *conscientiousness*, and *extraversion* have often been associated with creativity (Feist, 1998; Hoff et al., 2012; McCrae, 1987; Puryear, 2020).

Openness to experience is widely recognized as a robust, and perhaps even the strongest, predictor of creativity (Batey & Furnham, 2006; Feist, 1998; Taylor et al., 2017). For instance, the meta-analysis of Feist (1998) examined personality traits that can predict the creativity of artists and scientists and found that both groups exhibited a high level of openness to experience. Openness to experience contains two aspects (i.e. openness and intellect). Openness can be broken into three facets, namely fantasy, aesthetics, and feelings. Intellect can also be broken in terms of actions, ideas, and values (DeYoung, 2015; Kaufman et al., 2016). McCrae (1987) suggested three possible links for the common findings on the association between openness to experience and creativity. The first link is personal interest. High open individuals gravitate toward open-ended problem solving simply because they have such a proclivity. Interest breeds success which in turn breeds further interest. The second link is ability. Individuals with high intellect may have highly developed cognitive capacities, which help them successfully solve creativity-demanding tasks. The third link is craving for novel sensations. Individuals with high openness crave for novel sensations, which may in turn bring themselves a broad range of experiences/ideas and assist them in situations requiring creativity thinking. Kaufman (2013) suggested that effects of openness and intellect on creativity may

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depend on certain domains. For instance, openness was observed as being more relevant to artistic creativity, whereas intellect is more related to scientific creativity.

Conscientiousness contains industriousness and orderliness. The former can be broken into achievement-striving, self-discipline, and deliberation, while competence, order, and dutifulness are within the latter. Findings of the connection between *conscientiousness* and creativity have been inconsistent. It too may also depend on the specific creativity domain (Reiter-Palmon et al., 2009). Scientists were shown to be more conscientious than nonscientists, whereas artists were less conscientious than nonartists (Feist, 1998; Lievens et al., 2002). Moreover, studies found creative writers and contemporary dancers were respectively less conscientious than journalists and ballet dancers (Fink & Woschnjak, 2011; Kaufman, 2002). However, a recent meta-analysis reported a very small effect of conscientiousness on creativity (Puryear et al., 2017). To gain deep insights into the effects of conscientiousness on creativity, different aspects and facets of conscientiousness should be considered.

Extraversion contains enthusiasm and assertiveness. Enthusiasm is linked to activity-level, excitement-seeking, and positive emotion. Assertiveness is relevant to warmth, assertiveness, and gregariousness. Extraversion is also deemed as a consistent and significant correlate for creativity, especially in the case of divergent thinking tests (see details in Batey & Furnham, 2006). Puryear (2020, p. 319) even stated that "while openness to experience suggests an interest in novel ideas and actions, extraversion suggests a willingness to take the leap of doing something about it". Silvia et al. (2009) found that individuals with achievements in performing arts were more extraverted than those in the visual arts or without any major achievement. King et al. (1996) also observed a significant positive correlation between *extraversion* and verbal creativity. Specific aspects or facets of extraversion showed unidirectional positive correlations with creativity. For instance, those who are high excitement-seeking are more likely to go into novel activities and experience more enjoyment. Humor, which can be nurtured through artistic and creative pursuits, is captured with positive emotion.

Agreeableness contains compassion and politeness. Compassion consists of trust, compliance, and altruism. Politeness is made up of forwardness, modesty, and tender-mindedness. Agreeableness is typically shown to be unrelated or to have a weak connection with creativity. One can even say, "agreeableness has the smallest effects on creativity or fewest existing literature among the five factors". As for empirical findings, King et al. (1996) reported that *agreeableness* was negatively correlated with creative accomplishments.

Neuroticism contains volatility and withdrawal. Volatility combines self-consciousness, impulsiveness, and vulnerability. Withdrawal combines anxiety, hostility, and depression. Regardless of the measure used, the relationship between *neuroticism* (close mental illness) and creativity is quite complex (for further readings, see Kaufman, 2014; Silvia & Kaufman, 2010). Feist (1998) reported that artists were more likely to have high neuroticism, whereas scientists tend to score low on neuroticism. Karwowski and Lebuda (2016) conducted a meta-analysis and revealed a slightly negative effect on creativity. These contradictory findings necessitate further study and clarification.

There are various ways to measure Big Five traits. In 1992, Costa and McCrae (1992) published the Revised NEO Personality Inventory (NEO PI-R) Big Five NEO-Five Factor Inventory, the standard questionnaire measure of the Five Factor Model. This scale provides a systematic assessment of emotional, interpersonal, experiential, attitudinal, and motivational styles. The NEO PI-R concisely measures the big five personalities which are respectively defined through six traits or facets (30 facets in total). For instance, the facets of openness

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to experience include fantasy/imagination, aesthetics/artistic interest, feelings/emotionality, actions/adventurousness/exploration, ideas/intellectual interest/curiosity, and values/psychological liberalism/tolerance to ambiguity. The NEO PI-R is self-administered and has two parallel forms (self-report, form S; observer-report, form R). Each form contains 240 items (descriptions of behaviors) scored on a five-point Likert scale. A shortened version of NEO PI-R (the NEO Five-Factor Inventory, NEO-FFI) has already been developed. The NEO-FFI comprised of 60 items and can be completed in 10 to 15 minutes (the NEO PI-R requires 45 to 60 minutes). The NEO PI-R and NEO-FFI was recently revised in 2005 (McCrae et al., 2005). Typical items were listed as follows: "I seldom feel nervous", "When I'm around people, I worry that I'll make a fool of myself", and "I feel awkward around people".

5.1.3 Other Personality Traits

Other traits have also been examined and closely linked to creativity. Runco (2007, p. 314) asserted that "the creative personality can be described with some combination of the following: autonomy, flexibility, preference for complexity, openness to experience, sensitivity, playfulness, tolerance of ambiguity, risk taking or risk tolerance, intrinsic motivation, psychological androgyny, self-efficacy, wide interest and curiosity." Other scholars also pointed to flexibility, autonomy, independence, tolerance for ambiguity, risk taking, delay of gratification, stimulus and functional freedom, psychological androgyny (Kaya, 2020; Merrotsy, 2020; Oztunc, 2011). According to the meta-analysis by Feist (1998), creative individuals are more autonomous, dominant, impulsive, confident, and hostile. Traits like ambition, perseverance, initiative, etc. are also relevant to creativity.

Kaya (2020) considered *flexibility* as a "lasting tendency or acquired predisposition to evaluate a person, event or situation in a certain way and act accordingly". This creative attitude helps fully understand a problem, realize multiple views that can lead to creative solutions, and support adaptability by providing options. A creative person even has an inclination to think or behave flexibly and use unconventional approaches to solve problems. Empirical evidence has also shown that creative writers, artists, and scientists are more flexible than those with a lower level of creativity. Being flexible assists individuals in creative problem solving by changing their comprehension of the problem, direction of thinking, and strategies being used.

Feist (1999) and Oztunc (2011) also indicated that *autonomy* and *independence* are important to creativity. Autonomy refers to the inclination to be free from and independent of other people. Independence refers to the state of being free from other people's influence or control. As Oztunc (2011) stated, "there is a biological basis for the fact that creative individuals have a strong desire to be away from others, giving rise to the ultimate development of autonomy and independence". Given that originality reflects a tendency to be different or do what others are not doing, autonomy and independence may be a prerequisite for originality. In addition, autonomy-oriented personality involves traits such as introversion, intrinsic motivation, incompliance etc., all of which can considerably nurture individual creativity (Oztunc, 2011).

Stein (1953, p. 312) brought the concept of *tolerance for ambiguity*, which was possibly first proposed by Frenkel-Brunswik in 1948 (Merrotsy, 2020), into the creativity literature and asserted that "the creative person has a lower threshold, or greater sensitivity, for the gaps or the lack of closure that exist in the environment … Associated with this sensitivity is the creative individual's capacity to tolerate ambiguity." Stein considered tolerance for ambiguity as a capacity to "continue to effect resolution despite the present lack of homeostasis".

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Evidence in support of the association between tolerance for ambiguity and adult creativity is not robust and at best is equivocal. Moreover, this is even worse in case of child or adolescent creativity (Merrotsy, 2013). However, given compelling reasons (e.g. experiencing ambiguity is inevitable during creative exploration or developing a tolerance for ambiguity may be a desirable education outcome), further studies are still needed to enrich the understanding of this connection.

5.2 OPTIONS FOR CREATIVE PERSONALITY ASSESSMENT

Note that most of the abovementioned creativity personality research merely used general personality assessment tools (e.g. EPQ or Big Five NEO-Five Factor Inventory) rather than those specifically developed to reveal creativity-related personality traits. Creativity researchers have also specifically developed a series of creativity-related personality assessments to assess individual creative personality. The subsequent paragraphs will cover the most common options for creativity personality tests. These tests refer to psychometric approaches and process-oriented approaches.

5.2.1 Self-reported Psychometrics Approaches

Adjective Check List

Adjective Check List (ACL) is a sound self-concept instrument and has frequently been employed in creativity research (Domino, 1970; Gough & Heilburn, 1965; Smith & Schaefer, 1969). ACL contains 300 adjective items from absent-minded to zany. Although ACL does not contain a scoring criterion for creativity, attempts have been made to develop creativity scales for ACL. These creativity scales call for the selection of adjective items from the creativity-related adjective lists.

Using twofold criterion (teachers' evaluations and creativity test scores) for assessing creativity, Smith and Schaefer (1969) developed a 27-item ACL creativity scale, which can differentiate adolescents with high or low creativity. These items include artistic, imaginative, original, progressive, quick, resourceful, and spontaneous. One item was more often endorsed by those with lower ratings, the other 26 items were more often endorsed by those with higher ratings. Schaefer (1972, 1973) conducted follow-up studies for this 27-item ACL creativity scale and reported a sustained validity over time for this scale.

Domino (1970) compared the ACL teacher ratings for 59 creative college students, who had been nominated and observed over a three-year period, with those of a control group (non-creative). These two groups were matched on age, intelligence, academic major and personal adjustment. Results identified a total of 68 of the 300 ACL items significantly differentiated between these two groups ($p \leq 0.05$). Among the 68 items, 59 items were more often endorsed by the creative group and nine were more often endorsed by the control group. Domino retained the 59 creativity-related items to construct his creativity scale. Cross-validation analysis on 400 creative adolescents (creative in science, literature, or art) and 400 control ones indicated a rational and empirical validity for this ACL creativity scale. A very high internal consistency reliability of .91 and satisfactory validity in predicting students' creative performance in creative art and writing projects (Davis & Bull, 1978). Additionally, this scale

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is applicable to both sexes and not affected by specificity of creative achievement (Domino, 1970).

Welsh (1975) also conducted an item analysis of the ACL. Welsh first identified two dimensions: *Intellectence* and *Origence*. The former derives from intellectual functioning and behavior, whereas the latter derives from originality and aesthetic sophistication. Based on these two dimensions, Welsh specified four types of cognitive functioning: Type 1, high on Origence but low on Intellectence; Type 2, high on both Origence and Intellectence; Type 3, low on both Origence and Intellectence; Type 4, low on Origence but high on Intellectence. These four types can be briefly characterized as imaginative, intuitive, conventional and analytic cognitive styles. ACL scales were specifically developed for each quadrant. The A-1, A-2, A-3, and A-4 scale contain 21, 25, 17, and 24 items, respectively.

One of the most promising creativity assessment tools is the Welsh Figure Preference Test (WFPT), which consists of 400 black and white line drawings. Students were asked to respond "Like" or "Dislike" for each drawing. The Barron-Welsh Art Scale is a shortened form (65 items) of the WFPT and was developed by contrasting the responses of nonartists and artists (Barron, 1953). In order to control the certain response sets, a revised version was further developed by keying an equal number (both 30 items) of like and dislike responses. It does not need reading or writing and can be administered to children or adults in any language. The psychological traits defined by the Barron–Welsh Art Scale include personal style, social attitudes, and libidinal drives (Barron, 1953). The strength of the primary and secondary processes was manifested by this scale. The primary processes consist of ego functioning such as symbolization, condensation, and substitution. The secondary processes stress logic, planfulness, goal directedness, and adherence to form. A truly highly creative person is supposed to have access to the primary (even primitive) ego functions without abandoning logical reality (Welsh & Barron, 1963).

Gough (1979) also undertook a new ACL item analysis with larger samples and broader criteria, and developed a new ACL creativity scale named Creativity Personality Scale (CPS). Criteria of creativity for four subgroups included ratings by expert judges, faculty members, personality assessment staff observers, and life history interviewers. The ACL creativity scales of Domino, Schaefer, and Welsh's A1–A4 scales were scored on all protocols. Gough examined the correlation between each item and each of the four creativity criteria, examined whether the correlated items also appeared on other six ACL scales, and whether it was consistent with prior conceptualizations of creativity personality. For instance, the item *original* produced correlations with the creativity criteria of 0.13, 0.6, 0.17, and 0.11 in the four subgroups, appeared on both the Schaefer and Domino ACL scales, and fitted creative personality. Item analyses eventually yielded a 30-item CPS, which contains 18 positive (e.g. *capable*, *clever*, *confident*, *humorous*, *insightful*, *original*, etc.) and 12 negative items (e.g. *affected*, *cautious*, *conservative*, *conventional*, *interests narrow*, etc.). Subjects in the four subgroups then scored on the 30-item CPS. The obtained Alpha coefficient reliabilities were all above 0.70. The CPS showed a significantly positive correlation with all six ACL creativity scales, and even surpassed them in terms of its correlation with the criterion evaluations.

What Kind of Person Are You

Torrance and Khatena (1970) developed a brief screening scale for identifying gifted adolescents and adults, which was named "What Kind of Person Are You". The instrument was developed based on data from Khatena's empirical studies of creative people. The early

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version of this instrument comprised of 84 characteristics, which were reduced to 66 characteristics in a later version. Over 50 studies have shown these characteristics could differentiate between highly creative and less-creative individuals in certain fields. The present version of this scale comprises of 50 items and requires a test length of 5–10 minutes. Items for this scale were constructed by pairing characteristics of differing ranks and arranging them in a forced choice format (Torrance & Khatena, 1970). For instance, some items call for choices between two characteristics that differentiate between highly creative and less-creative individuals (e.g. "A self-starter" versus "Obedient"). The rationale is that creative individuals will choose the one that is more essential to creativity. The test-retest reliability and validity of this scale have been examined by multiple studies and relative findings were positive (see details in Torrance & Khatena, 1970). The authors suggested that "What Kind of Person Are You" could be used as a brief, coarse screening tool for identify creative individuals in both classroom and laboratory.

Pennsylvania Assessment of Creative Tendency

In 1971, Rookey published the "Pennsylvania Assessment of Creative Tendency" (PACT). It is a Likert-style attitude inventory designed to evaluate the creative tendency of elementary school children. PACT is based upon three assumptions: (I) there is such a thing as a student potential for creative output; (II) there are events that can affect creativity; and (III) there are characteristics which are common to creative production. In this instrument, Rookey defined creativity as "the conception by an individual of an event or relationship which, in the experience of that individual, did not previously exist." Consistent with this definition, items were constructed based upon nine creativity-related traits. These nine traits were self-direction, evaluative ability, flexible thinking, original thinking, elaborative thinking, willingness to take risks, ease with complexity, curiosity, and fluent thinking ability. In terms of reliability and validity, relative investigations have yielded favorable results for PACT. There are three forms of PACT, namely Form-45, Form-39, and Short Forms. The Form-45 and Form-39 consist of 45 and 39 items, respectively. There are two experimental short forms of PACT. The first form is a split-half of 19 items per half, and the second form has three sets of 13 items. Items (e.g. "I don't like changes" or "I like to try new things") call for ratings ranging from "1 (Strongly Disagree)" to "5 (Strongly Agree)".

The Creativity Assessment Packet

The Creativity Assessment Packet (CAP) has been widely used in a selection of gifted and talented student programs. The CAP was developed based on the Williams Model for Implementing Cognitive-Affective Behaviours in the Classroom (Williams, 1980). This packet intends to measure eight cognitive and affective factors of pupils: fluency, flexibility, elaboration, originality, curiosity, imagination, risk taking, and complexity. It aims to objectively profile creativity by covering the "most relevant factors" of creativity in students aged 8 to 18 years old. This CAP consists of a student divergent thinking test (12 drawings), a student self-assessment checklist (50 self-rating items), and a teacher/parent checklist (48 items). The self-assessment checklist requires students to rate the 50 items using scores from 1 (not fit) to 3 (fit very well). These items can be grouped into four dimensions: risk taking, curiosity, imagination, and complexity. The teacher/parent checklist requires children's teachers, caregivers, or parents to compare the described characteristics with the children. These items can be grouped into the abovementioned eight factors. The teacher or parent just needs to place

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either a double check (✓✓) when the characteristic is frequently present or a single check (✓) when it is occasionally present. One sample item is "The students who thrives in try again and again in order to gain success (Complexity)." The CAP is suitable for children of 6 to 18 years old. However, the publisher did not provide either validity or reliability results. Cooper (1991) even stated "unfortunately, the Creativity Assessment Packet seems a hasty complement to the respected Williams Model of creative behaviors."

Other measures

Self-rated scales such as the How Would You Describe Yourself (HWYDY; Runco, 2004), the Chinese Adolescents' Creative Personality Inventory (CACPI; Qian et al., 2010), and the Creative Person Profile (CPP; Martinsen, 2011) have also been used for measuring creative personality. The HWYDY scale consists of 15 Likert items ("0" never to "5" always). These items respectively contain an adjective and a brief description explaining the adjective. Contraindicative items are also included in the scale to avoid response sets. All of these adjectives derive from theories of the creative personality. The CACPI aims to measure the construct of adolescents' creative personality. It is comprised of three dimensions and nine sub-dimensions which are assessed using 130 five-point Likert items. All items are drawn from previous established psychometric tools. Factors include self-confidence, curiosity, risk taking, norm-doubt, independence, internal motivation, openness, persistence, and self-acceptance. The CPP was developed by reoperationalized constructs from the research on creative personality. The initial CPP contains 38 facets and 304 Likert five-point items. Later, the developer identified seven factors, which were labeled as emotional instability, ambition, associative orientation, motivation, need for originality, agreeableness, and flexibility. These seven factors were shown to be more relevant to creativity in a sample of 481 participants (Martinsen, 2011).

Teachers' reports of creative personality have also been used to assess children's creative characteristics (Lim & Smith, 2008). This is a 13-item checklist scale of adjectives relevant to creative personality. These items include independence, confidence, risk taking, adventurousness, curiosity, originality, open-mindedness, liking complicated problems, unconventional, insightful, inventive, looking for new ways of doing things, and imaginative. Teachers are required to score how much students match each adjective on a five-point scale ("1" always true, "5" not true at all).

5.2.2 Process-oriented Approaches

Problem-construction Test

This is a new approach for assessing creative personality, which is rooted in the interactionist perspective (Mischel & Shoda, 1995). This perspective suggests that individual personality can be understood in terms of the situations one tends to engage in or escape from. Personality can even exhibit through goals, problems, or behavioral strategies used to achieve the goal (see Reiter-Palmon et al., 1998). Reiter-Palmon et al. (1998) explored whether problem construction plays a role in how individuals comprehend ambiguous and ill-defined problems in a way that fits with their personality traits. Researchers measured participants' personality type, values, goals, leisure activities, problem construction ability, etc. Results showed that problem construction capacity covaried with the fit of the solution to the personality type. Both problem construction and solution fit are relevant to solution quality and originality.

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This study provided initial evidence that problem construction may help manifest individual personality traits. However, further support is required to validate this approach.

Creative Functioning Test

The Creative Functioning Test (CFT) measures creative personality as in the context of process-oriented personality and is based on the perceptogenesis theory (Smith, 2001; Smith & Carlsson, 2001). The CFT adopts a perceptgenetic technique and investigates perceptual microprocesses to understand creativity. The main assumptions of the CFT are based on the perceptgenetic approach suggesting that personality is expressed through perception which reflects the personal characteristics and modes of adaptation (Draguns, 2010). Therefore, since a creative personality possesses different, more flexible mode of adaptation, it may have a specific adaptation style that one can measure. The CFT has two main dimensions (i.e. fluency and flexibility) deriving from a straight (ordinary) perceptgenetic and an inverse one. A thematic stimulus is first presented in perceptgenetic fashion until it is correctly comprehended. Exposure times will be systematically cut back thereafter. "By thus eroding the stimulus support for a correct reporting, the CFT is used to find out how dependent the test participant is on the consensus meaning of the stimulus picture and how inclined he or she is to revert to idiosyncratic alternatives, to assert his or her subjective independence" (Smith, 2005, p. 294). Such characteristic of independence is associated with a variety of indications of creativity (Smith & Carlsson, 2001). The CFT has a completely different theoretical and methodological background from the conventional psychometric approaches. Many studies, conducted mainly in Sweden, have shown that the CFT has good psychometric properties in respect of validity.

5.3 PROS AND CONS OF THE AVAILABLE CREATIVE PERSONALITY ASSESSMENT

Psychometric approaches are the dominant assessment option in the current creative personality assessment research. These approaches are economical, easy to conduct, and effectively differentiate between highly creative or less-creative individuals. However, currently available psychometric approaches cannot avoid several deficits. First, the field of creativity investigation has been going on for several decades, the definition of creativity is still not unified. There are even multiple definitions of creativity in this field, which might result from the complexity of such a human capacity. However, only if the definition of creativity is unified among creativity researchers around the world, the accuracy of the creativity personality assessment tools can be much improved. Second, most of the available scales were developed based on a few creativity criterion and target samples, thereby using a broader creativity criterion and multiple samples might contribute to the reliability and validity of the developed scales. Third, currently available assessment tools were based on classical psychometric method and traditional assessment strategies. Process-oriented approaches, which is currently nascent, may be a promising option for developing creative personality assessments techniques. Moreover, with the rapid development of scientific technology, techniques such as neuroimaging devices, virtual reality, augmented reality devices, and even machine learning (Alexander III et al., 2020) may help improve personality assessment and our understanding of creativity.

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