

Cognitive and Conative Profiles of Creative People



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Based on the multivariate approach to creativity (Lubart, 1999; Sternberg & Lubart, 1993), a set of cognitive, conative and emotional characteristics can be identified as the psychological basis of creative potential. These characteristics combine in interactive ways to yield varying degrees of creative potential depending on creative tasks requirements. The large number of existing behavioral science studies, including neuropsychological research, permits a rich synthesis of the results leading to a set of key intellectual, personality, motivational and emotional facets that creative people show. The relative importance of these characteristics varies according to the nature of the creative work, and domain of endeavor.

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1 Cognitive Abilities and Creativity

Although the importance of the cognitive component in the profile of creative individuals has often been studied as a set of specific abilities involved in the creative process (e.g., Botella et al., 2013; Carlson & Gorman, 1992; Finke et al., 1996; Hayes, 1989; Myszkowski et al., 2014; Ward, 2007), one of the main debates regarding such a component is related to the relationship between general mental ability and creativity. But, beyond general mental ability, are there specific cognitive resources that promote creativity? Also, we may wonder if creativity is manifested in *how* one's cognitive abilities are used, rather than in their availability. In other words, creative individuals may tap into their cognitive resources differently.

2 Communalities Between General Mental Ability and Creative Potential

The relationships between creativity and general mental ability—or *g*—have been largely discussed from both theoretical and empirical points of view (Zenasni et al., 2016a, 2016b). Since creativity involves cognitive processes and information processing, it is clear that it depends on the cognitive abilities that significantly contribute to the production of ideas. Therefore, the two constructs, although relentlessly challenged in their respective definitions and measures, certainly overlap, because they both involve a problem-solving component (Corazza & Lubart, 2021; Sternberg, 2001). Indeed, when individuals take either a general mental ability test or a creativity measure—whether composed of divergent thinking tasks, like the Torrance Tests of Creative Thinking (Torrance, 1966, 2008), or composed of more integrative tasks (Lubart et al., 2011) involving creativity judgments of experts or trained novices (Storme et al., 2014) through the Consensual Assessment Technique (Amabile, 1983)—they face a set of problems for which they need to find solutions.

To solve such problems and address their environment, individuals have to engage in diverse mental activities that involve a range of cognitive abilities. Some mental activities are involved in both *g* measures and creativity measures, leading to an overlap. More specifically, on one hand, both *g* and creativity measures often involve idea production, where individuals have to solve a problem through the generation of many ideas—fluency—of different categories—flexibility—and that are rare or unusual—originality (Kaufman, 2015); on the other hand, creativity tasks require individuals to generate ideas that are not only novel and styled, but also useful (Besemer, 1998; Besemer & O'Quin, 1999; Besemer & Treffinger, 1981). This implies that, like in general mental ability tests, creative individuals have to address task constraints, which is also a common denominator of most definitions of general mental ability (Sternberg, 2001): Intelligent individuals and creative individuals are generally both defined as being capable of adapting to, and proposing appropriate solutions to various constraints.

The empirical consequences of this conceptual overlap are found in the wealth of research showing correlations between various creativity measures and general mental ability measures (e.g., Batey & Furnham, 2006; Jauk et al., 2013; Miroshnik & Shcherbakova, 2019; Myszkowski et al., 2015; Nusbaum & Silvia, 2011). It has notably been suggested that updating—the ability to refresh information in working memory—is the executive function that is the most common to *g* and creativity (Benedek et al., 2014), and thus explains these relations. However, the magnitude of the relations between *g* and creativity is typically small or moderate, suggesting that creativity has its own specificities and cannot be reduced to a manifestation of *g*.

2.1 *The Specificity of Creative Cognition*

Do creative individuals use their cognitive ability in the same way as others? In other words, do they create and find ideas because they have a different use of their abilities compared to other people? To answer this question, let us first note that researchers generally distinguish conceptually creativity from *g*. Notably, Wallach and Kogan's seminal work (1965) shows that children may present a high level of intelligence but a low level of creativity whereas some may present a high level of creativity and a low level of intelligence—in other words, creativity and intelligence are distinct constructs.

One of the explanations for the limited strength of the relation between general mental ability measures and creativity measures could be that intelligence measures hardly leave enough space for creativity-related cognitive activities (especially divergent thinking). This can be considered as a limitation of general mental ability measures, because it questions the extent to which they are fully able to predict achievement (Gajda et al., 2017; Kaufman, 2015), to which they really tap into an individual's potential (Kaufman et al., 2012), and to which they avoid biases (Kaufman, 2006, 2010; Kaufman et al., 2012). In addition, work focusing on the executive functions involved in creativity and *g* measures (Benedek et al., 2014) indicates that some executive functions are involved in creativity but not (or less) in *g*, notably inhibition—the ability to suppress dominant but incorrect responses. Another explanation can be found in the threshold theory (Guilford, 1967), according to which the correlation between general mental ability and creativity only exists below a critical intelligence level—corresponding to an IQ of approximately 120. Above this threshold, the correlation weakens or becomes null (Barron, 1961; Jauk et al., 2013; Jung et al., 2009; Karwowski et al., 2016; Leon, 1971; Preckel et al., 2006; Runco & Albert, 1986).

Another explanation for the modest relations between general mental ability tests and creativity measures is the potential attenuation of correlation effects due to the imperfect reliability of the instruments used to observe the relationships between the two constructs (Hunter & Schmidt, 2004), which is supported by the variability of observed correlations across studies that use different creativity measures. Additionally, the relation between the two constructs may be domain-specific: it may be more modest in some domains—for example those that are more applied or rely more

either on specific abilities, like domain expertise, or on the conative component, like artistic (Botella et al., 2013) or managerial (Myszkowski et al., 2015) creativity—and larger in other domains—for example domains, like engineering or science, where most contributions are more forward-incrementing (Sternberg, 2001) or integrating (Sternberg et al., 2002).

Finally, another explanation could be the fact that, although the constructs may be overlapping, the measures have, in general, been designed for different objectives. Typically, general mental ability measures are built for clinical settings, as diagnostic instruments, tools to predict school success, productivity and overall achievement; creativity measures, in contrast—in spite of their associations with psychopathology (Batey & Furnham, 2008)—are often considered as tests of “potential”, with the perspective of stimulating (rather than predicting) human capacities, to drive innovation and to encourage individual self-actualization.

These various explanations show that, while relatively modest correlations are observed between measures of general mental ability and creativity, they may hide a bigger overlap between the cognitive abilities involved in *g* and creativity: Individuals who are capable of complex reasoning and abstract conceptualizations have an advantage when having to generate and apply useful solutions. But only to a certain extent: Creative products are useful, but are also novel. Therefore, general mental ability is only a prerequisite for creativity (Sternberg, 2001), and there are other elements to the cognitive component of creative potential and achievement (Zenasni et al., 2016a, 2016b) than *g*.

2.2 *Other Abilities*

One of the main challenges in establishing the “creative profile” of an individual—as well as in studying creativity in general—is the partial domain specificity of creativity (Baer, 1998). In other words, whereas research may support that a specific ability or trait is related to higher creativity, such a conclusion may only be valid in the creativity field of the study, and may not be generalizable to other fields. However, there is some communality between domains.

Expertise in a specific domain is not only a useful characteristic to judge creative products (Amabile, 1983; Storme et al., 2014): It is also an essential characteristic of creative individuals in many domains (Sternberg, 1998). This is because the creative process is facilitated by the presence of a referential (Botella et al., 2013), a structured network of preexisting ideas to combine or extend, as suggested by the structured imagination theory (Marsh et al., 1999; Smith & Ward, 1995; Ward, 1994; Wilkenfeld & Ward, 2001). Through such a structure, individuals build a system of rules, a network of possible wanderings (Newell and Simon, 1972)—for example, an even number of limbs and symmetry when creating animals in a drawing (Ward, 1994; Ward & Sifonis, 1997)—that they use to produce new ideas. However, it is useful to distinguish the different forms of creative production: When creating by forward incrementation or integration, or reinvention (Sternberg, 2001; Sternberg

et al., 2002), an expert with a great number of potential “wanderings” may find more useful and novel solutions than a novice, who would find already existing ideas without even realizing that they are not novel, or without assessing their usefulness correctly—put in another way, solutions that, although creative compared with the individual’s own referential, are not creative at higher levels, using the larger social world (i.e., the population of all existing solutions) as a referential; in contrast, when creating by redefining and reinventing something, novice individuals may be less inclined to fall into the “trap” of non-original of existing paths. Thus, creativity may be observed in novices—mini- or little-c creativity (Kaufman & Beghetto, 2009)—as an individual’s creative products can be compared to the individual’s own referential, as much as it can be observed in experts or geniuses, for whom creative products are compared with the world as a reference point.

Apart from accumulated expertise in a specific domain, creativity relies also on perceptual and judgment abilities related to the field. Indeed, it is often suggested that a step in the creative process is that of judging ideas, in order to sort them, to discard the bad ones and keep—or combine—the good ones (Botella et al., 2013; Cropley, 2006). But the ability to judge products, which is part of the creative process, is not only related to accumulated knowledge one has. In other words, creativity judgment expertise is not only a function of how much exposure to or knowledge one has accumulated on a topic. For example, studies on the judgment of visual art tend to indicate that judgment could be a predictor of creativity (Myszkowski & Zenasni, 2016; Myszkowski et al., 2014). In any case, acumen when judging creative products and ideas is certainly a central aspect of creation. An example of this can be found in the way musicians and musical producers or movie directors ensure they have accurate monitoring equipment in order to perceive and predict the impact of the piece that is produced, or how painters or sculptors need to step away from their paintings to observe them from different points of view, or from a typical spectator’s point of view. The ability to represent accurately structures in creative products (for example, rhythm and pitch in music, organizational balance and symmetry in visual arts) can help advance towards a more creative production. Nevertheless, it should be noted that research also suggests that general mental ability plays a role in judgment ability (Myszkowski et al., 2018). In other words, effects of judgment ability may be, in some part, one of the mechanisms of the relation between general mental ability and creativity, and therefore, the incremental predictive power of judgment ability over creativity, over and beyond general mental ability, remains open for discussion.

In sum, the typical cognitive profile of a creative individual is complicated to draw. It would certainly include many abilities that we would theoretically consider to be manifestations of general mental ability. If, however, general mental ability is defined by the content of the tests used to measure it, then there are certainly several abilities that are involved in the creative process but that are not present in general mental ability tests (Kaufman, 2015). Beyond mental abilities, for individuals to be thrown in at the deep end of creativity, they often need to acquire expertise in the domain. Doing such, they develop their ability to wander and handle ideas that are not just novel, useful and styled compared with their own previous productions, but that are also novel, useful and styled when compared with others’ productions. Finally, aside

from intellectual performance and expertise, we advocate that other abilities than domain-specific knowledge and general mental ability may play domain-specific roles.

3 Personality Traits and Creativity

Numerous theoretical and empirical studies show that some personality traits support creativity. Most of the research related to this field is based on exploratory psychometric studies which often examine how main personality traits described in classical models of personality, such as the Big Five, as related to creativity (Feist, 1998). However, an important number of recent studies also show that some very specific personality dimensions, not fully apparent in standard personality models, have an explicit role in creativity and creations. This is mostly the case of emotion-related personality traits which tend to be usually covered, in a much reduced way, by the generic concept of neuroticism. Beyond these numerous empirical studies, we may note that only few theoretical models describe how personality traits or personality structure predict creativity. We will first present these models.

3.1 *Personality and Creativity: Theoretical Expectations*

Relationships between personality traits and creativity have been examined at the conceptual level over the past century. For example, Eysenck (1993) developed a theory unifying personality and creativity. According to his model, psychoticism is the principal personality trait favoring original thinking and creativity. He proposed first that creative achievement may depend on personality traits—such as internal motivation, confidence, nonconformity, and originality. Originality and nonconformity may be related to psychoticism, which is defined in Eysenck's model of personality as a dispositional trait, concerning one's reality orientation, underlying susceptibility to the development of psychotic symptoms. Psychotism favors creativity because it favors the ability to be original: Individuals with high levels of psychotism show less constrained top-down processes and thus reduced cognitive inhibition (Abraham et al., 2005). This theory is in part based on previous empirical findings, from Richards (1981) notably, who found elevated levels of psychopathology among eminent creators compared to the general population. Many following studies confirmed, in part, this model (e.g., Batey & Furnham, 2006; Feist, 2018).

In a less clinical perspective, Sternberg and Lubart (1995) proposed that six specific factors of personality should be theoretically involved in creativity: Tolerance of ambiguity, willingness to surmount obstacles, willingness to grow, intrinsic motivation, moderate risk taking, and desire for recognition.

Tolerance of ambiguity was first considered by Vernon (1970) as an individual characteristic fundamental for creative individuals. It can be a resource to move forward when individuals face an ambiguous situation, particularly when it can induce anxiety. Some studies tend to validate the positive impact of ambiguity tolerance on creativity. However these relationships appear to be sensitive to contextual conditions. For example, Zenasni et al. (2008) observed a positive relation between these dimensions, but only when the creative task is based on ambiguous stimuli. Similarly, Wang et al. (2011) observed that high tolerance of ambiguity is associated with employee creativity only when there is at least moderate role ambiguity. Willingness to surmount obstacles may also be related to perseverance. This trait should be related to creative achievement: facing rejection by colleagues or the public concerning a creative idea, a creative individual should persevere until they succeed in their project. This is also related to willingness to grow and intrinsic motivation which both are resources and impulses that give creators the energy and desire to pursue and achieve closure in a creative process. Risk taking is a resource of creativity because it leads creators to invest in ideas and processes that they are not necessarily supported by others. Finally, narcissism and the desire for recognition is also a potential characteristic for creative achievements because it motivates any potential creator to produce the most original production. This may be related to overconfidence and arrogance sometimes observed in empirical studies (as described in a later section of this chapter).

In the Emotional Resonance Model of creativity (ERM, Lubart & Getz, 1997), affective intensity and emotional idiosyncrasy appear as significant emotion-related personality traits for creativity. This model predicts that creativity may be the result of idiosyncratic emotional experiences; individualized emotions are attached to concepts or images in memory and describe how these emotional endocepts interact with each other and can provide the basis for creative associations. In other words, Lubart and Getz consider that when a concept or image is activated (through external stimuli or internal thought), its emotional profile—the attached endocept—is also activated. This endoceptual activation then propagates the emotional profile as a global “wave” throughout the memory system. In this perspective, affective intensity and emotional idiosyncrasy are potential boosters in this model. Affect intensity is defined as a tendency to experience emotional reactions that are strong or extreme in a given emotional situation (Larsen & Diener, 1987). Emotional idiosyncrasy is defined as the tendency of individuals to experience personalized emotions differently from those that others tend to experience in a given situation (Averill, 1999). According to the ERM model, these affective traits should favor creativity because individuals with a significant personal experience upon which they have dwelt and for which they acquired complex, intense, and idiosyncratic emotions, and who furthermore are highly attentive to their emotional processes will be the most effective in generating emotion-based associations for creativity. Botella et al. (2011) complete this model suggesting that alexithymia, defined as the difficulty to identify and verbalize emotions, may prevent individuals from being creative because people who show alexithymia will have relatively poor, undeveloped endocepts, leading to weak resonance.

In an integrative model, Fürst et al. (2016) proposed that three high-order personality factors predict two main process factors, which in turn predict intensity and achievement of creative activities. The personality factors are: Plasticity (high openness, extraversion, energy, and inspiration), Divergence (low agreeableness and conscientiousness, high non-conformity and impulsivity), and Convergence (high ambition, precision, persistence, and critical sense).

3.2 Personality of Creators: Evidence-Based Research

As pointed out by Batey and Furnham (2006), the study of the relationships between creativity and personality is mostly based on the study of modern theories of personality such as the Big Five or Eysenck's three-factor model of personality. These studies are in line with preceding exploratory studies which tend to identify creative individuals who present specific personality traits. Thus, in their early research on this topic Cattell and Drevdahl (Cattell & Drevdahl, 1955; Drevdahl & Cattell, 1958) examined the personality traits of creators in several domains such as art, literature, physical science, biology, human sciences etc. They observed that artists and writers, compared to individuals from the general population present higher ego-strength, are self-sufficient, more dominant, adventurous, unconventional, and radical (Drevdahl & Cattell, 1958). Scientists seem to present the same characteristics. These results are in line with works from the Institute of Personality Assessment and Research (IPAR). MacKinnon (1962) showed that renowned architects tend to be more independent, individualist, self-confident, unconventional and spontaneous. Gough (1979) in order to develop a scale of creative personality explored the personality traits of certified and/or mathematicians, scientists, and architects using the Adjective Check List. Among all the 300 adjectives tested, eighteen refer positively to creative personality (capable, clever, confident, egotistical, humorous, individualistic, informal, insightful, intelligent, interests wide, inventive, original, reflective, resourceful, self-confident, sexy, snobbish, and unconventional). If we consider all these initial studies, the personality of creators may be summarized by a combination of a strong ego and unconventional attitudes. At this point we may propose that strong self-confidence helps creators to express their non-conformist tendencies and ideas. As instructive as these original studies seem, we may limit their conclusions because they focused on distinguished creators, having succeeded in their activities. It is difficult to say whether these personality traits are factors of creativity or factors of success and notoriety in creative occupations.

Recent studies based on the Big Five model of personality extend this perspective showing significant relationships between specific personality traits and creativity evaluated by different methods capturing both normal and exceptional creativity. The Big Five model proposes that specific personality traits can be derived from five main factors which are Openness, Conscientiousness, Extraversion-Introversion, Agreeableness and Neuroticism. Among these traits, Openness is the one which appears systematically, positively and significantly related to divergent thinking (McCrae,

Table 1 Characteristics associated with creativity

	Cognitive	Motivational	Social	Affective
<i>Artist's traits</i>	Imaginative	Impulsive	Aloof Cold Independent Non-conformist norm-doubting	Anxious Emotionally Sensitive
<i>Scientist's traits</i>	Flexible		Arrogant Autonomous Dominant Self-confident	
<i>Common traits</i>	wide interests	Ambitious Driven	Hostile Introverted Openness	

1987). For McCrae, openness interacts with the divergent thinking process to make possible creative production. The robust relationship observed between openness and creativity was confirmed in many distinct studies (e.g., Jauk et al., 2014; Silvia et al., 2009). Openness may in fact have two implications for creativity. First, it leads individuals to be exposed to many distinct objects and situations that are fruitful for creating and associating. Moreover, openness reflects a motivational component because open individuals desire new experiences and new knowledge.

The importance of openness is confirmed by Feist's (1998) meta-analysis. Feist identified the main personality traits related to scientific and artistic creativity, and concluded that a creative person tends to be more open to new experiences, more self-confident, more dominant, less conventional and less conscientious than other people. However, Feist pointed out differences in personality traits between artists and scientists, both considered as creative job groups. He summarized these differences considering the nature of personality traits which can be cognitive, motivational, social or affective. Table 1 presents the personality traits specific to artists and scientists.

From this meta-analysis, we may observe some common personality traits between artists and scientists. Several social-related personality traits seem to characterize both artists and scientists, but emotional traits seem to be specific to artists. Artists seem to be distant from others and norms whereas scientists show themselves as dominant and do not show a specific profile on emotionality. As noted by Feist himself, this meta-analysis must not be considered exhaustive because it refers mostly to artists and scientists and not all the potential domains of creation. It is also dependent on previous studies which focus on specific models of personality testing specific dimensions with specific methodologies. Ma (2009) pursued in part Feist's analysis, by conducting a meta-analysis with a systematic selection of variables relative to the creative person, the creative process, the creative product and the creative environment. Analyzing 2,013 effect sizes from 111 studies, Ma showed that openness to new experiences, mysticism (i.e. a tendency to interpret an unusual

experience as a general or religious mystery) and affective sensibility are personality variables related to creativity.

Moreover, we note that recent research has been conducted considering the HEXACO personality model (Ashton & Lee, 2007). Silvia et al. (2011) examined to which degree the HEXACO factors (i.e., Honesty-Humility, Emotionality, Extraversion, Agreeableness, Consciousness, Openness to experience) are related to creative achievement and activities. They observed that the higher is the level of Honesty and Humility, the lower levels of creative activities and creative achievement tend to be. As discussed by the authors, this is in line with Feist's work indicating that arrogance and hostility are positive factors of creativity. Research (Furnham et al., 2013) has also indicated relations between narcissism and self-reported creativity, in line with high self-esteem and pretentious vocabularies observed in Gough's research. The main interpretation is that arrogant, pretentious individuals may have sufficient self-esteem allowing them to achieve their potential and to take risks in spite of the constraints (Silvia et al., 2011).

4 Self and Creativity

As highlighted, creativity often involves a combination of a strong ego and unconventional attitudes. It is indeed understandable that creative work requires breaking with existing codes and standards and therefore may take a great deal of risk taking, courage and self-confidence. In recent years, there is a growing interest in ego- and self-related dimensions important for creativity. These dimensions have been categorized under the term "creative self-beliefs" (e.g., Karwowski & Barbot, 2016), which refer to people's convictions about their own creative potential, creative achievement, and creative identity, as well as their perception of what creativity is.

Historically, this literature is rooted in Maslow's (1958) and Rogers' (1954) work, who qualified creativity as a natural fulfillment of the self and a mechanism for achieving one's potential. Recent perspectives conceptualize creativity and the self quite differently, often suggesting a reciprocal dynamic between interests, domain-specific self-concepts, and creative achievement. For example, "investment" theories of self-concept suggest that self-concepts determine interests leading to activity, effort, and perseverance and in turn, to achievement (e.g., Ackerman & Heggstad, 1997). Conversely, the *expectancy-value theory* (Wigfield & Eccles, 2000) suggests reciprocal relations between domain-specific achievement, self-concept, and personal interests. Regardless of the issue of directionality, it is established that self-concept (particularly creative self concept), represents an aspect of creative potential that facilitates or inhibits the achievement of one's potential (e.g., Jaussi et al., 2007; Karwowski & Barbot, 2016).

A possible mechanism for this dynamic is the following: Creative self-concepts refer to representations structured by an individual's creative personal identity (importance given to creativity in the definition of the self) which is confirmed and reinforced by creative role identity (fulfillment of the "social role" of being

a creative person). Creative identity builds upon past experiences with creative endeavors. People who consider creativity as an important part of the definition of themselves (salient creative identity) seek opportunities to be creative in order to maintain and affirm this fundamental aspect of themselves. By fulfilling their social role as someone creative (thus, increasing creative productivity), they increase the odds of successful creative achievements (Helson & Pals, 2000). In turn, successful creative achievements will shape a person's creative self-efficacy, itself predictive of the quality of creative outputs (Beghetto, 2006) and, ultimately, will reinforce creative personal identity. Hence, creative self-efficacy can be viewed as a form of domain specific self-confidence which may help individuals persevere in their creative endeavors even when external support lags behind. This dynamic is illustrated through eminent examples often characterized by a high level of self-confidence for creative work (Feist, 2014).

However, empirical studies that have more directly investigated the relationship between creativity and self-related variables (in particular self-esteem) have usually reported low to moderate associations as well as limited external validity (Hoff, 2005). In recent work, we have suggested that these inconsistent results may be due to different developmental pathways (1) (different patterns of associations between creativity and aspects of the self may arise at different developmental stages) and (2), multidimensionality of both creativity and the self, leading to relationships of different magnitude depending on whether domains are congruent or incongruent (Barbot & Lubart, 2012; Karwowski & Barbot, 2016; Zenasni et al., 2016a, 2016b).

Finally, individuals differ in terms of specific metacognitive components of creative self-belief, which may impact creative outcomes. In particular, creative mindsets refer to a combination of creative self-knowledge and contextual knowledge (e.g., knowing when to be and when not to be creative; Kaufman & Beghetto, 2013). Fixed creativity mindset (i.e., belief that creativity is mainly an inherited feature and cannot change) may be related to a lack of "Resilience" in the face of negative feedback on creative performance outcomes, which could lead to creative mortification (Beghetto, 2014). In contrast, growth mindsets (i.e., beliefs that creativity is not a fixed property and can grow and change overtime) is a prerequisite for pursuing creative endeavors regardless of external pressures, negative feedback, and poor performance outcomes that could be discouraging along the way.

5 Conclusion

In this chapter, we have provided an overview of the traits and abilities that are generally found in creative individuals, thereby specifying a creative profile. We discussed first how cognitive abilities—general and specific—are acquired and how expertise plays an important role in creativity. We discussed under which conditions these abilities are involved. We then discussed conative aspects and what personality traits are typically found in creative individuals. Finally, we discussed how creative individuals are characterized by the way they view themselves.

Although there has been a lot of work to understand individual creativity, there still is much to be done to fully grasp it. It is important to note that what we presented here is only an overview, and does not account for the full complexity of individual skills, abilities, personality traits and self-concept. This is the case for several reasons. First, the structure of cognitive abilities, personality traits and creativity itself are far from completely understood yet. Second, the measures of many of the constructs discussed here—including individual creativity—are very partial, and we hope that improvements in measurement will facilitate the study of creativity. Third, the empirical results discussed here essentially rely on statistical effects that are of varying magnitude, being often small or moderate. In other words, and as an example, it would be incorrect to assume that because a statistical relation between creativity and risk-taking is often found (as we discussed earlier), then it is impossible for someone to be creative if the individual is not a risk taker. There are many individuals who could serve as counterexamples to the statistical relations we described (e.g., creative artists with low self-esteem), and one must consider that skills and personality traits are not always stable within individuals, notably across situations (i.e., one may avoid taking risks in some situations and domains, not in others). Finally, in spite of decades of work on the topic, there are certainly plenty of other traits and abilities that could be mentioned in this chapter, but that are still insufficiently studied, not studied at all, or that we simply did not include for the sake of brevity. Therefore, the set of traits, skills and abilities used here to describe typical creative individuals is unavoidably partial, and should be considered a work in progress.

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