



Higher-order factors of the Big Five predict exploration and threat in life stories

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ABSTRACT

Research has not previously examined whether higher-order traits of the Big Five are related to characteristics of life story narratives. The current study explored possible links between the broad dispositions of Stability (comprising the shared aspects of Agreeableness, Conscientiousness, and Emotional Stability) and Plasticity (comprising the shared aspects of Extraversion and Openness) with narrative accounts of threat and exploration in the life-stories of 128 adults. Stability was inversely related to construals of *threat* in narratives, and Plasticity was positively related to *exploration* in narratives after controlling for the suppressor effects of demographic variables. These findings add to the research linking higher-order factors of the Big-Five to important domains as well as research linking dispositional traits to narrative identity.

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1. Introduction

A longstanding goal in personality psychology is to develop a comprehensive taxonomy of traits (Allport, 1937; Cattell, 1943; Eysenck & Himmelweit, 1947). A growing number of personality theorists currently favor a hierarchical structure in which orthogonal higher-order traits are composed of several correlated lower-order traits (Markon, Krueger, & Watson, 2005). Over the last two decades, a general consensus has emerged that the highest level in the personality hierarchy is occupied by traits included in the Five-Factor Model (Costa & McCrae, 1992a; McCrae & Costa, 2008), or the Big-Five (Goldberg, 1990; John, Naumann, & Soto, 2008): Extraversion, Agreeableness, Conscientiousness, Emotional Stability, and Openness. A recent challenge to this viewpoint is that the Big-Five, which were originally conceived as orthogonal, have shown a consistent pattern of intercorrelations (DeYoung, 2006; DeYoung, Peterson, & Higgins, 2002; Digman, 1997). The intercorrelations among factors result in two higher-order factors that exist above the Big-Five in the personality hierarchy. The first factor is marked by Agreeableness, Conscientiousness, and Emotional Stability, and the second factor is marked by Extraversion and Openness. Digman (1997) originally gave the factors the provisional labels α and β , but the factors have since been renamed Stability and Plasticity, respectively, due to their putative biological origins (DeYoung et al., 2002).

Given that the higher-order factors represent a very broad level of description, they should predict a wide range of phenomena.

Supporting this notion, a number of studies have established the predictive utility of Stability and Plasticity by showing their relationships to behavioral engagement and restraint (Hirsh, DeYoung, & Peterson, 2009), conformity (DeYoung et al., 2002), externalizing psychopathology (DeYoung, Peterson, Seguin, & Tremblay, 2008), and even circadian rhythms (DeYoung, Hasher, Djikic, Criger, & Peterson, 2007). A straightforward conclusion from this research is that individuals with different levels of Stability and Plasticity live their lives in very different ways. It might therefore be expected that individuals with different levels of Stability and Plasticity might *interpret* and *make meaning* out of their lives in very different ways. However, no research has examined this possibility. The purpose of this study is to explore whether Stability and Plasticity are related to how people make sense of their lives. We do this by testing whether the higher-order traits are related to thematic characteristics of life-stories.

Life-stories are self-authored and integrative reconstructions of the past, interpretations of the present, and projections of one's self into the future (McAdams, 2008; Singer, 2004). In Western societies, life-stories begin to emerge in adolescence in response to the psychosocial challenge of constructing a coherent identity (Habermas & Bluck, 2000; McAdams & Olson, 2010). The challenge of identity demands is the task of organizing one's many experiences, inhabited roles, and personal values into a unified and purposeful whole (Erikson, 1963; McAdams, 1993). Many scholars have come to believe that it is later in life through the psychological construction of life-stories that people come to understand who they are and how they relate to others and the world (e.g., Bruner, 2004; McLean, Pasupathi, & Pals, 2007; Singer, 2004). In other words, identity is partly formed through one's internalized narrative of the self. As the construction of life stories into a coherent

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narrative identity is one way that people may potentially give unity, meaning, and purpose to their lives, the investigation of life stories is one way to study self and identity.

This study specifically aims to determine whether Stability and Plasticity are related to life-story construals of novel opportunities that life presents in terms of *threat* and *exploration*. This research is important for at least two reasons: First, it has the potential to advance personality theory and further elucidate the psychological meaning of higher-order factors of personality by establishing links between different levels of personality; second, it has the potential to validate a new method for analyzing life-stories. Below, we review research on Plasticity and Stability in order to provide a rationale and develop specific hypotheses for why the higher-order traits may be differentially related to construals of threat and exploration in life-stories.

2. The psychological meaning of Stability and Plasticity

The heterogeneous nature of Stability and Plasticity calls into question how these factors should be interpreted. Digman (1997) theorized that the factors that comprise Stability (Emotional Stability, Agreeableness, and Conscientiousness) all share the common characteristic of behavioral restraint. Drawing on classical theories of development, Digman suggested that the relative ability to control one's behavior, and thus one's level of Stability, resulted from the success with which one was socialized as a child to inhibit aggressive and impulsive tendencies. He posited that the factors that Plasticity comprises (Extraversion and Openness) share in common the characteristic of personal growth, resulting from inherent organismic tendencies to experience life in a full and engaging manner.

Digman's interpretations have been criticized by DeYoung et al. (2002) as conceptualizing the higher-order factors as life "outcomes." This type of interpretation is in direct contrast to the widely endorsed idea that higher-order personality factors denote basic temperamental dispositions (Ashton & Lee, 2007; McCrae & Costa, 1997; Rothbart, Ahadi, & Evans, 2000). DeYoung et al. (2002) thus reconceptualized the Stability dimension as reflecting individual differences in the basic tendency of human beings to maintain a stable constitutional organization and the Plasticity dimension as reflecting individual differences in the basic tendency to incorporate novel information into that organization.

It is important to note that DeYoung's reconceptualization maintains much similarity to Digman's original formulation in terms of psychological content, but it differs importantly in that the higher-order factors are thought of as residing relatively earlier in the causal chain of personality development. Reinforcing the idea that the higher-order factors are fundamental, Stability and Plasticity are conceptually similar to the Piagetian (Piaget, 1970) processes of adaptation, assimilation and accommodation: Stability may be thought of as reflecting a dimension of personality similar to the process of assimilation (incorporating information from the outside world into a stable internal knowledge structure), whereas the Plasticity dimension seems closer to the process of accommodation (developing new internal knowledge structures to fit information encountered while exploring the environment). Just as assimilation and accommodation are distinct ways of engaging with the common task of adapting to the environment, DeYoung et al. (2002) conceptualized Stability and Plasticity as separable dimensions reflecting one's typical ways of engaging with the environment. "The opposite of Plasticity is not Stability but rigidity, while the opposite of Stability is not Plasticity but instability" (DeYoung et al., 2002, p. 537). Thus one's propensity to actively explore the environment is not at odds with the degree to which one incorporates the knowledge one gains into a stable

(or unstable) knowledge structure. Structural analyses have repeatedly supported this statement by revealing weak to moderate positive associations between the Big Two (DeYoung, 2006; DeYoung et al., 2007, 2008). In keeping with the idea of Stability and Plasticity as distinct and deeply ingrained fundamental dimensions of personality, DeYoung et al. (2002) proposed that Stability should be positively related to serotonergic functioning, whereas Plasticity should be related to dopaminergic functioning.

DeYoung and colleagues have garnered support for their model of Plasticity and Stability in a number of domains. DeYoung et al. (2002) found that Stability was positively related to conformity whereas Plasticity was negatively related to conformity. These findings were predicted based on the ideas that individuals higher in Stability should embrace society's call for social, motivational, and emotional maturity, whereas individuals higher in Plasticity should reject conformity because to conform is theoretically opposed to engaging with novelty in a flexible and creative ways. A separate study (DeYoung et al., 2008) showed that Stability was negatively related to externalizing psychopathology (aggression, impulsivity, antisocial behavior, hyperactivity, and drug abuse). In this study, Plasticity was positively related to externalizing psychopathology only after partialling out cognitive ability. These findings were taken to support the ideas that Stability reflects the motivation and ability to exhibit behavioral control and refrain from socially destructive acts, and that the exploratory aspects of Plasticity (those parts unique from cognitive ability) are related to seeking out and trying novel experiences. Perhaps the strongest support for the idea that Stability reflects behavioral restraint and that Plasticity reflects behavioral engagement comes from a recent study examining the relationships between each higher-order trait and a variety of behavioral acts (Hirsh et al., 2009). This study showed that Stability was negatively related to risky behaviors such as using alcohol or drugs, driving fast, and feeding stray animals. In contrast, Plasticity was positively related to exploratory behaviors such as volunteering for a club, going dancing, and attending public lectures. The finding that Stability and Plasticity were related to different behaviors lends further support to the idea that the Big Two are distinct constructs.

Each of the aforementioned findings were also taken as indirect support for Stability's relationship to serotonergic functioning and Plasticity's relationship to dopaminergic functioning, as increased serotonin is thought to be related to behavioral restraint whereas increased dopamine is thought to be related to behavioral engagement (DeYoung et al., 2002).¹

3. Stability and Plasticity in life-stories

The picture emerging of a person high in Stability is that of one able to restrain from disorderly behavior that does not conform to the demands of society, whereas an individual relatively low in Stability may be likely to flout dominant societal mores and engage in potentially risky behavior. The prototypical individual high in Plasticity likely prefers to engage in exploratory behaviors, adapt to change and experiment with new ideas, whereas an individual with lower levels of Plasticity may be less likely to seek out experiences with the potential to lead to personal growth. Put simply, Stability at its core is reflected in individual differences in maintaining order, and Plasticity is reflected in individual differences to adapt to change.

¹ Notwithstanding the growing evidence in favor of the validity of Plasticity and Stability, some still favor the more narrow Big-Five as the fundamental level of personality (Ashton, Lee, Goldberg, & de Vries, 2009; McCrae et al., 2008). However, others (Musek, 2007; Rushton & Irwing, 2008) prefer an even broader, single "general factor" of personality. The debate over which level of personality is most fundamental is an important one but is beyond the scope of this paper.

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