



# Can the Big Five explain the criterion validity of Sense of Coherence for mental health, life satisfaction, and personal distress?



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## ABSTRACT

**Objective:** Several studies have demonstrated a strong overlap in variance between the salutogenic construct Sense of Coherence (SOC) and the Big Five personality traits, yet the unique contributions of these overlapping constructs remain debated. Specifically, the statistical association between SOC and neuroticism has been taken as evidence for SOC representing a fundamental personality trait in disguise. The present research explored the incremental validity when predicting crucial psychological outcomes: mental health, satisfaction with life, and psychological distress.

**Method:** Participants ( $N = 1842$ ; 1574 female, 268 male, age 15–77 years), who completed an online survey, answered health-relevant questionnaires (SCL-K-9, SWLS, IRI-PD).

**Results:** Multiple regression analysis showed that the Big Five can explain 40% of the observed variance in SOC. However, when using all variables as predictors of mental health, satisfaction with life, and personal distress, SOC showed substantial incremental validity over the Big Five traits.

**Conclusion:** Despite overlapping variance, the importance of salutogenesis beyond the Five Factor Model can be demonstrated specifically for health outcomes. Differences in criterion validity and incremental validity of SOC imply that SOC cannot be equated with reversed neuroticism.

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## 1. Introduction

Sense of Coherence (SOC) is the core concept of Antonovsky's salutogenic theory. It is a general resistance resource that promotes resilience and health (Antonovsky, 1987, 1998). Three factors are thought to underlie SOC: *comprehensibility*, an individual's perception that situations and events are structured and clear; *manageability*, an individual's belief of having the necessary skills to deal with life challenges; and *meaningfulness*, the conviction that the demands and challenges of life are worthy of investment and engagement. SOC is conceptualized as a general "orientation-to-life", rather than a fundamental personality trait. It supposedly protects one's health in the face of critical and stressful life events, yet can only develop by coping with adverse events in childhood, adolescence, and young adulthood.

Converging with theoretical expectations, SOC has strong associations with health and health-related behavior (Eriksson & Lindström, 2006; Togari, Yamazaki, Takayama, Yamaki, & Nakayama, 2008). Specifically, it has been shown to predict psychological well-being (Nilsson, Leppert, Simonsson, & Starrin, 2010),

depression (Eriksson, Lindström, & Lilja, 2007; Haukkala et al., 2013), and anxiety (Moksnes, Espnes, & Haugan, 2013). SOC appears to be a psychological resource of resilience. But whether SOC is a genuine construct of theoretical importance has been questioned, because fundamental personality factors—such as the Big Five personality factors (McCrae & Costa, 1987)—are prime candidates for achieving predictive validity in these domains, and, as we will see, particularly neuroticism shows strong agreement with SOC.

The present contribution addresses the uniqueness of SOC. We will first explore the relationships among SOC and the Big Five. Second, we will test the strength of the associations each competing construct has with mental health and related variables such as personal distress (as part of empathy) and life satisfaction.

### 1.1. Disentangling construct overlap between Sense of Coherence and neuroticism

The uniqueness of SOC as a construct can be challenged by the view that the Big Five traits explain substantial amounts of SOC variance. This view stands in contrast to Antonovsky's (1987) theory, which implies that SOC is not a temperamental personality trait, but rather a general "orientation to life", which develops under highly individual-specific life challenges. Hence, SOC should be rather malleable, acquired during adolescence, develop into

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adulthood, only to reach stability around the age of 30 (Antonovsky, 1987). Assuming temporal instability of SOC among young people has promoted the view that SOC cannot be a reasonable predictor of mental health; not in the long run. In the face of predictive validity, SOC might better be explained by personality traits that stabilize its variance. Researchers critical of SOC contend that it could be a mere correlate of other traits, or a byproduct of mental health, rather than a causal factor (e.g., Geyer, 1997).

Several empirical findings are in line with such a SOC-critical view. First, SOC resembles emotional stability (Gibson & Cook, 1996) as evident in strong negative associations with neuroticism ( $r = -.85$  to  $-.56$ ; Feldt, Metsäpelto, Kinnunen, & Pulkkinen, 2007; Hochwälder, 2012). The statistical association puts the distinctiveness of SOC as a construct into question, because emotional stability, or (reversed) neuroticism, has a sound biological basis (Haas, Omura, Constable, & Canli, 2007; Norris, Larsen, & Cacioppo, 2007), including genetic foundations (Rettew et al., 2006; Wray, Birley, Sullivan, Visscher, & Martin, 2007). Second, SOC can be measured surprisingly well among children as young as only 12 years old (Honkinen, Suominen, Rautava, Hakanen, & Kalimo, 2006). This is compatible with temperamental aspects that emerge during early childhood (Edmonds, Goldberg, Hampson, & Barckley, 2013). Third, although initially expected to be fluctuating at young age (Antonovsky, 1987), SOC is relatively stable not only among adults, but also among adolescents over the course of at least 5 years (Feldt, Leskinen, Kinnunen, & Mauno, 2000; Feldt, Leskinen, Kinnunen, & Ruoppila, 2003; Grevenstein, Bluemke, Nagy, Wippermann, & Kroeninger-Jungaberle, 2014; Hakanen, Feldt, & Leskinen, 2007). This is reminiscent of traits that show rather stable characteristics (Wray et al., 2007). Fourth, like SOC, neuroticism is useful for predicting mental and physical health outcomes (Costa & McCrae, 1987; Gale, Booth, Möttus, Kuh, & Deary, 2013; Grav, Stordal, Romild, & Hellzen, 2012; Lahey, 2009; Williams, O'Brien, & Colder, 2004).

Finally, there is considerable variance overlap between SOC and other Big Five personality traits (Costa & McCrae, 2009). Apart from the strong negative associations with neuroticism (N), small positive correlations have been reported with extraversion (E), agreeableness (A), and conscientiousness (C) (Feldt et al., 2007; Hochwälder, 2012). People's SOC scores might reflect the interplay of these basic traits, which explain up to 40% of SOC variance (Hochwälder, 2012) and challenge SOC as a theoretically genuine concept.

A conclusive answer can only be reached by letting the constructs compete against each other and inspect shared and unique components when predicting relevant criteria (Judge, Erez, Bono, & Thoresen, 2002). Any lack of predictive validity of SOC above and beyond the Big Five traits for relevant criteria would be in line with the idea that SOC reflects neuroticism in disguise, or forms a broader index of fundamental personality traits. On a theoretical note, if unique predictive validity existed, the relative contributions of the most important personality factors in etiopathogenesis and salutogenesis might be disentangled. This could advance our understanding of personality and health-related aspects. In line with Antonovsky's theory, we expected empirical support for the unique value of SOC.

## 1.2. Validation criteria: mental health, personal distress, and life satisfaction

In the light of the patterns above, we expected SOC to be associated with *mental health*. Though N might predict mental health, SOC was expected to show incremental validity.

Traditionally, empathy was considered a positive aspect of mental health too. It has been found to be negatively related to psychological disorders such as depression (Schreiter, Pijnenborg,

& aan het Rot, 2013) and schizophrenia (Smith et al., 2012). A prominent model by Davis (1980, 1983) distinguishes four dimensions, one of them being *personal distress (PD)*—a person's disposition to feel uncomfortable when faced with emotionally challenging social situations. Not only have the dimensions of empathy been associated with the Big Five, but specifically PD was closely related to N (Lee, 2009; Mooradian, Davis, & Matzler, 2011). Given that SOC buffers against the distress experienced during life challenges, PD qualifies as a criterion to which both SOC and N might contribute to. SOC's incremental validity for predicting PD above and beyond N (and other Big Five traits) would strengthen the salutogenic view.

*Satisfaction with life* has long been identified as an aspect of mental and physical health (Headey, Kelley, & Wearing, 1993; Strine, Chapman, Balluz, Moriarty, & Mokdad, 2008). In line with prior research, we expected SOC to be associated with life satisfaction (Pallant & Lae, 2002). Incremental validity of SOC over N would, again, show that there is a unique source of variance that cannot be attributed to N (or other Big Five traits).

Taken together, our research not only re-investigated the relationships between SOC and the Big Five traits; we simultaneously inspected criterion validity with regard to the aforementioned health-related variables. Only if it can empirically be shown that SOC possesses incremental validity over classic personality traits, one can argue that SOC covers unique aspects, constituting an important, and valid, construct of its own.

## 2. Methods

### 2.1. Procedure and participants

The data were collected as part of a study on personality and health-related variables, which also explored relationships with nutrition and vegetarianism/veganism, so participants also reported on eating habits not considered here. Participants took an online survey advertised at social media sites (e.g., Facebook) and announced via local university e-mail lists. Participants were informed about the study goals, that participation was completely voluntary, and that they could drop out any time. Only complete responders' data were analyzed. On separate webpages participants encountered (a fixed order of) questionnaires as detailed below. After thanking participants, they could partake in a lottery of vouchers (25€).

The final sample included 1842 individuals ( $M_{\text{age}} = 28.11$  years,  $SD = 9.22$ ;  $n = 4$  did not indicate age). According to levels of education, sampling was relatively proportional to recent educational trends in Germany, with 18.3% basic schooling, 45.6% high school degrees, or 36.1% university entrance level (one participant did not provide any information). The sample was less balanced in terms of genders,  $n = 1574$  female (85.5%) and  $n = 268$  male (14.5%). Given the scope of the study, self-selection may explain the disproportionately high number of females. Consequently, we controlled for participants' sex in addition to age and level of education.

### 2.2. Measures

#### 2.2.1. SOC-13: Sense of Coherence

The German, previously validated, 13-item adaptation of Antonovsky's original orientation to life scale (Schumacher, Gunzelmann, & Brähler, 2000a; Schumacher, Wilz, Gunzelmann, & Brähler, 2000b) includes four meaningfulness items (e.g., "Do you have the feeling that you don't really care about what goes on around you?"), five comprehensibility items (e.g., "Has it happened in the past that you were surprised by the behavior of

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