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Interest in truth versus beauty: Intellect and Openness reflect different pathways towards interest *



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ABSTRACT

Openness and Intellect have been proposed as different pathways towards cognitive exploration, yet this distinction remains untested with respect to the exploratory emotion of interest. In this study we examined multi-level appraisal processes to determine whether Openness and Intellect differ in their effects on interest. University undergraduates (*N* = 99) rated their interest in seven literary quotations, and appraised the quotations for their novelty and understanding. Both Openness and Intellect predicted greater interest, but via different pathways. In between-person analyses, understanding mediated the Intellect/interest but not the Openness/interest relationship (i.e., high-Intellect people are more interested through greater understanding). In within-person analyses, Openness (but not Intellect) significantly moderated the understanding/interest relationship. High-Openness people experienced greater interest in difficult to understand quotations. Results highlight the need to examine within-person effects and to consider the lower-level elements of personality. These findings distinguish Openness and Intellect in terms of pathways towards interest and provide a dynamic understanding of the differences between them.

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1. Introduction

There is a developing consensus that personality is best understood not just in terms of differences between people, but also as differences in within-person processes (Hampson, 2012). Studying within-person processes using multi-level analyses is an increasingly popular paradigm for personality research, as it integrates process and structural models of personality. Using this withinperson paradigm, Silvia (2005) proposed a within-person appraisal structure for the emotional state of interest, involving appraisals of novelty (judgments of complexity and unfamiliarity) and understanding (judgments of coping potential). The personality domain of Openness/Intellect and one of its facets (trait curiosity) are involved in the appraisal processes leading to interest (Silvia, 2008; Silvia, Henson, & Templin, 2009). However, such effects have only been considered for the broad domain and a single facet, without considering that different elements of Openness/Intellect can show different and even opposite effects (e.g., Ziegler, Danay, Schölmerich, & Bühner, 2010). In the current study, we separately consider the effects of both Intellect and Openness aspects of

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Openness/Intellect (DeYoung, Quilty, & Peterson, 2007) on the within-person appraisal processes underlying interest. While Openness and intellect have been distinguished in their associations with cognitive and creative abilities they are also theorised to reflect different pathways towards cognitive exploration (DeYoung, 2014). Openness reflects individual differences in exploration through perceptual or sensory information. In contrast, Intellect reflects individual differences in exploration. However, these two different exploratory pathways have never been directly tested. In the paragraphs below, we outline the theoretical models of within-person appraisals and personality assessed, as well as our reasons for examining the separate aspects of Openness/Intellect.

1.1. The appraisal processes underlying interest

Interest is an exploratory emotion that facilitates arousal, promotes attention, is associated with learning and exploring, and is felt in response to situations and stimuli that require thinking and understanding (Silvia, 2010). Interest has an empirically demonstrated appraisal structure, depending on two appraisals: *novelty* and *understanding* (Silvia, 2005). The novelty appraisal facilitates attention to possibly important changes in the environment, and the understanding appraisal estimates our capacity to cope with a given situation (Ellsworth & Scherer, 2003). This

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appraisal structure has been replicated for poetry, film, and visual art, indicating stability across different types of stimuli (Silvia, 2005; Silvia & Berg, 2011; Silvia et al., 2009).

The appraisal approach to emotions contends that appraisal processes are subjective evaluations of situations that rely on a person's needs, preferences, goals, and abilities (Ellsworth & Scherer, 2003), and should therefore be associated with individual differences in personality. Kuppens and Tong (2010) proposed two types of individual differences within the appraisal-emotion system: (a) appraisal strength, and (b) appraisal-emotion relationships. Appraisal strength refers to a between-person tendency to, for example, appraise situations as more understandable and therefore experience greater overall interest. In this scenario understanding is a mediating variable that explains why some people experience interest in more situations. Differences in appraisal-emotion relationships refer to within-person contingencies. For example people may differ in the importance of understanding in their experience of interest. In this scenario personality acts as a moderator of understanding-interest

In a study of interest in visual art and poetry, Silvia (2008) found that personality predicted differences in *appraisal strength* but not differences in *appraisal/emotion relationships*. Specifically, individual differences in trait curiosity (a facet of Openness/Intellect) predicted stronger appraisals of understanding (but not a stronger understanding/interest relationship). In fact, appraised understanding mediated the relationship between personality and interest. In the current study, we test this mediation for the domain of Openness/Intellect rather than its narrow facet of curiosity. We hypothesise that understanding will also mediate the relationship between Openness/Intellect and interest.

A further study found that differences in both trait curiosity and the Openness/Intellect domain predicted different *appraisal-emotion relationships* (Silvia et al., 2009). Openness/Intellect predicted membership in a cluster where interest was best predicted by novelty and less so by understanding, as opposed to a cluster where interest was best predicted by understanding and less so by novelty. We therefore hypothesised that Openness/Intellect would predict differences in appraisal-emotion relationships.

The inconsistency between the two previous studies is whether personality predicts appraisal—emotion processes (one study found such a relationship, the other did not). These differing results may be due to the different levels of analysis of personality (i.e., the specific personality facet of curiosity and the broad domain of Openness/Intellect). We propose that separately examining the two major aspects of Openness/Intellect can clarify their effects on the appraisal processes underlying interest. We will thus examine the effects of Intellect and Openness aspects on both appraisal strength and appraisal—emotion relationships.

1.2. The nature of the Openness domain: differentiating Openness and Intellect aspects

The Openness/Intellect domain is associated with individual differences in quintessentially human outcomes such as creativity, engagement with the arts, higher cognitive functioning, vocational interests, values and political affiliations. Yet Openness/Intellect remains arguably the most controversial domain in Big Five models. Openness/Intellect has been plagued by heterogeneity and disagreements regarding its nature and therefore label. Additionally, a dynamic understanding of the domain remains out of reach, as research has primarily focused on the structure and predictive validity of the domain, at the cost of a process based approach.

The current study addresses both these concerns by clarifying the suggested relationship between Openness/Intellect and cognitive exploration (DeYoung, 2014). Studying situational processes alongside dispositional variables has long been advocated (Cronbach, 1957; Underwood, 1975), but rarely followed. Recent findings suggest that this is a powerful approach (see Kuppens and Tong (2010) for a review) that can address our central research questions: (1) *How* do Openness and Intellect relate to cognitive exploration? and (2) can Openness and Intellect be distinguished as different pathways to cognitive exploration?

Disagreements regarding the structure and nature of the Openness/Intellect domain led Goldberg (1993) to call it a "scientific embarrassment" (p. 27). Different methods of measurement traditions underlying structural studies eventually converged on two conceptualisations of the domain. Questionnaire based research labelled the domain as Openness to Experience (McCrae & Costa, 1985), while adjective based research argued for Intellect (Peabody & Goldberg, 1989). Saucier (1994) suggested that both conceptualisations were important aspects of the domain. Finally, Johnson (1994) poetically described the two conceptualisations as "interest in truth" (Intellect) versus "interest in beauty" (Openness).

Recent psychometric evidence suggests two distinct yet related aspects of the Openness/Intellect domain: Openness and Intellect (DeYoung et al., 2007). DeYoung et al. (2007) proposed that Openness and Intellect aspects constitute a new level of personality located between the broad domain Openness/Intellect and the narrow facets. Intellect is conceptually similar to the Openness to Ideas facet, reflecting perceived intelligence and intellectual engagement (DeYoung, 2014). Mussel (2010) found strong empirical evidence that the facets of curiosity and Openness to ideas were virtually identical, suggesting that the effects of curiosity on the appraisal structure of interest should also generalise to the Intellect aspect of personality. We therefore hypothesised that the mediating role of understanding in the Openness/ Intellect-interest relationship would be particularly a function of intellect due to its proximity to curiosity measures. Openness is represented by the Openness to Aesthetics, Feelings, and Fantasy, reflecting engagement with sensation and perception, fantasy and artistic creativity (DeYoung et al., 2007).

Openness and Intellect have different associations with cognitive and creative abilities, and with scientific and artistic creativity. Openness relates to greater crystallised intelligence, implicit learning and artistic creativity whereas Intellect relates to both fluid and crystallised intelligence and to scientific creativity (Kaufman, 2009; Nusbaum & Silvia, 2011). Such differences support the idea that Openness and Intellect are distinct constructs, but do not speak to the proposed distinction in terms of cognitive exploration. DeYoung (2014) suggests that Openness reflects individual differences in exploration through perceptual or sensory information, and that intellect reflects individual differences in exploration of abstract information. The main goal of the current research is to test these two different exploratory pathways.

1.3. The present research

The current research looked to explore: (1) the relationships between Openness/Intellect and the states and appraisal processes of interest, and (2) the utility and validity of separating Openness and Intellect by studying their relationships with interest and its associated appraisals in response to quotations. We chose quotations due to their general popularity as engaging short thoughts and ideas.

Based on the literature reviewed above, we have three hypotheses. First, we hypothesise that the three personality variables (Openness/Intellect, Openness and Intellect) will predict: (a) greater appraisals of understanding, and (b) greater interest in quotations. Second, we hypothesised the Intellect–interest relationship will be mediated by understanding appraisals, replicating previous results for the related construct of curiosity (Silvia, 2008).

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