

Title: Emoji Use in Tweets:  
Relationships with Personality Traits and Word Usage

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INTRODUCTION

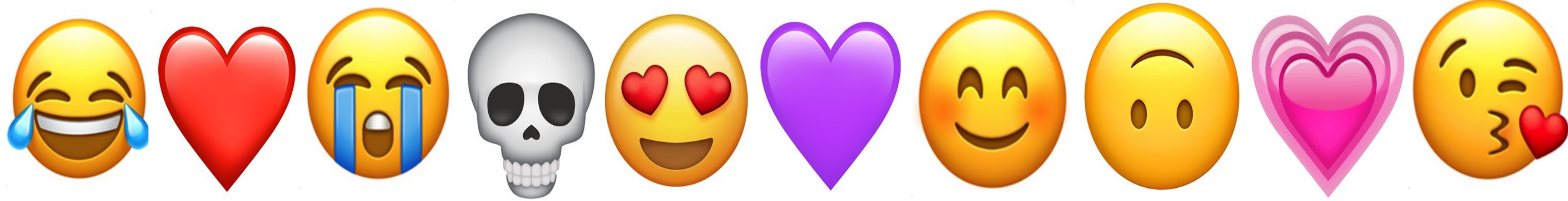
Studies have demonstrated that language used on social media can be used to estimate to users' age (Schwartz et al., 2013), gender (Chen et al., 2018; López-Rúa, 2021; Schwartz et al., 2013), and personality traits (Azucar et al., 2018; Golbeck et al., 2011; Hall & Pennington, 2013; Li et al., 2017; 2019; Marengo et al., 2017; Park et al., 2015; Qiu et al., 2012; Schwartz et al., 2013). Few studies have examined the extent to which use of emoticons or emojis in social media posts relate to individual differences in personal characteristics (Aljasir, 2023; Hall & Pennington, 2013; Li et al., 2018; López-Rúa, 2021). In the present research, we reasoned that our use of emojis during communication may relate to our personality traits (i.e., Big Five traits and HEXACO traits).

METHOD

**Participants.** In Sample 1, there were 76 participants (52 women, 22 men, 2 other) who consented to have their posts analyzed, and in Sample 2, there were 245 participants (67 men, 177 women, 1 other).

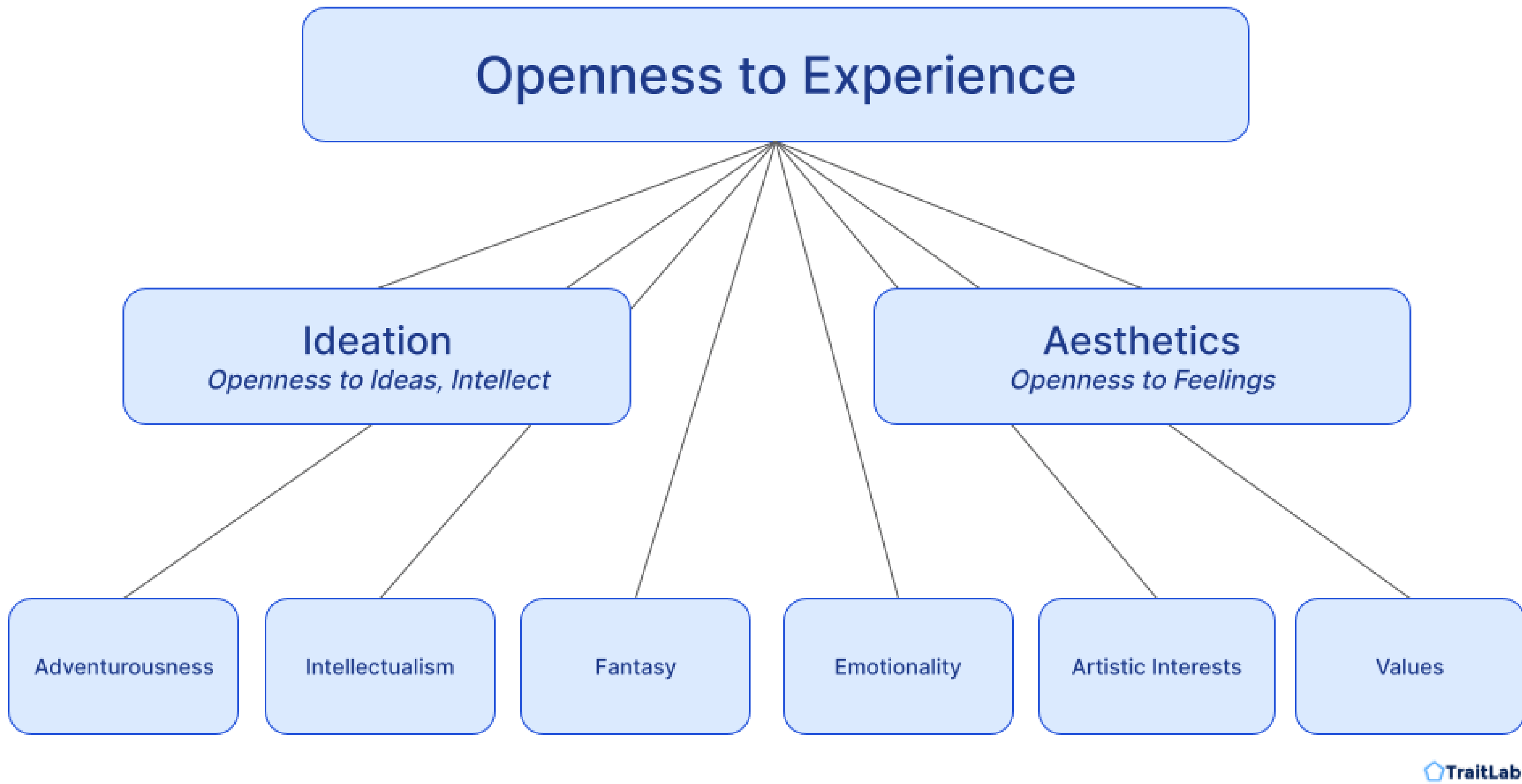
**Materials.** For sample 1, we assessed Big Five personality traits using Saucier's (1994) 40-item mini-markers questionnaire. For sample 2, we assessed personality traits using Ashton and Lee's (2009) 60-item HEXACO questionnaire (i.e., Big Five traits and honesty-humility).

**Procedure.** Personality traits were assessed in an online survey, which was set up using a professional license of Qualtrics. Some participants consented to have their tweets analyzed. They provided the username for their X (formerly Twitter) public account. Two samples were collected. Sample 1 was collected during 2020-2021. Sample 2, a much larger sample, was collected during 2021-2022. We retrieved posts using the Twitter API with an academic research license. A script written in Python was used to retrieve posts. We were limited to downloading the most recent 3200 posts per account.



*Those who used the most emojis  
were those with the **lowest levels**  
of openness to experience.*

Figure 1. Multiple Facets of Openness to Experience Trait



RESULTS

In both samples, we observed that participants reporting lower levels of openness to experience used emojis more often and also used a wider variety of emojis. There were relationships between emoji use and some of the LIWC word categories. The LIWC categories differed for the two samples. In sample 1, more frequent use of emojis in posts was related to more frequent use of words related to **family**, **positive emotion**, and **sadness**. Less frequent use of emojis was related to more frequent use of **articles** and **insight words**. In sample 2, the larger of the two samples, more frequent use of emojis was related to more frequent use of **you-pronouns**, **I-pronouns**, **adjectives**, **negative function words** (e.g., no, not, never), and **time words**. More frequent use of emojis was also related to using **fewer dictionary words** and numbers. Those using a larger variety of emojis also used **you-pronouns** and words related to **seeing**, **leisure**, and **religion** more frequently than those using a smaller variety of emojis.

DISCUSSION

The results are novel in that they are the first to demonstrate a relationship between emoji use and openness to experience. Prior research has suggested that each of the Big Five personality traits reflect multiple facets (Costa & McCrae, 1992). Openness to experience involves six facets: adventurousness, being imaginative, being intellectually curious, questioning authority, being emotionally aware, and being interested in the arts. See Figure 1. A more fine-grained analysis of openness to experience is needed to determine which facet(s) are most strongly related to emoji use.

APPLICATIONS

Applications of these results include analyzing emoji use of prospective employees or customers in industries in which openness to experience is important (e.g., entertainment and scientific research). Frequent use of emojis and using a wider variety of emojis could be indicative of one of more of the following: lower levels of imagination, adventurousness, curiosity, emotional awareness, interests in the arts, and/or questioning of authority. For more information:

