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# Cultural Differences in the Personality Triad: The Interplay of Personality Traits, Situation Characteristics, and Behavioral States Around the World

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Understanding the interplay of persons, situations, and behavior (the Personality Triad) is a key task of psychology. However, previous research has largely focused on Western samples. We examined the Personality Triad across cultures with $N = 15{,}221$ participants from 61 countries and one geographic region. Participants reported on one situation from their daily lives. We examined (a) situation characteristic–behavioral state, (b) trait–behavioral state, and (c) trait–situation characteristic associations, as well as (d) Trait × Situation Characteristic interactions predicting behavioral states. We focused on six traits (Big Five, Honesty-Humility), seven situation characteristics (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Sociality), and three self-reported behavioral states (Agency, Enthusiasm, Self-Negativity). Importantly, we included 15 country-level variables (collectivism, self-construal, cultural value orientations, tightness, independent and interdependent happiness, national socioeconomic status) as moderators that might contribute to country differences in the Personality Triad. Bayesian multilevel models showed sizable and expected situation characteristic–behavioral state and trait–behavioral state associations with a high degree of generalization across countries, some cultural differences, and moderator effects contradicting theoretical expectations. For instance, we found weaker situation characteristic effects in collectivistic cultures and stronger trait effects in embedded cultures. Trait–situation characteristic associations were meaningful but smaller, and Trait × Situation Characteristic interactions were small and less often significant (although we observed some expected interactions). We found little evidence for country differences in the latter two relations. We discuss implications and future directions for cross-cultural work on the Personality Triad, including replications and extensions using intensive longitudinal designs.

*Keywords:* Personality Triad, culture, Person × Situation interactions, person–environment relations, situation characteristics



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*continued*

Human behavior is influenced by both situational factors and individual differences. Accordingly, psychology has long emphasized the importance of the interplay between persons, situations, and behavior (Allport, 1937; Lewin, 1936; Murray, 1938), which make up the "Personality Triad" (Funder, 2006).[1] Especially in the last decades, personality psychology has seen a resurgence in interest concerning the processes underlying psychological states in relation to situational variables (Rauthmann, 2021a). Thus, important progress is being made in the understanding of relations among elements of the Personality Triad (persons, situations, and behavior), which is central to personality psychology in particular as well as to psychology more broadly. Crucially, people are embedded

[1] The Personality Triad is conceptualized to be symmetric with respect to its three elements. First, persons can be understood in terms of the behavior they enact in certain situations. Second, behavior can be understood in terms of the persons who enact it in certain situations. Last, situations can be understood in terms of who enacts certain behaviors in them (Funder, 2006). It is termed the *Personality* Triad given that understanding personality requires an understanding of this interplay between persons, situations, and behavior—which, accordingly, is central to personality psychological research.



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in their culture, which has important consequences for psychological processes (Henrich et al., 2010; Kitayama & Cohen, 2007; Matsumoto, 2001). However, the vast majority of work on the Personality Triad has focused on highly selective samples, typically from Western countries. Thus, little is known about cultural similarities and differences in the interplay between elements of the Personality Triad. However, insights about such differences are necessary to gauge the generalizability of our findings about the Personality Triad. Moreover, they are central to understand whether and how cultural differences manifest in the interplay between persons, situations, and behavior.

We use data from the International Situations Project (Lee et al., 2020) with a large number of participants (mostly university/college students) from 61 countries and one geographic region, encompassing non-Western countries and those at varying stages of economic development. Participants reported on one situation from their previous day. Based on these data, we examine four relations across countries: (a) situation characteristic–behavioral state (S–B) associations, (b) personality trait–behavioral state (P–B) associations, (c) personality trait–situation characteristic (P–S) associations, and (d) Personality Trait × Situation Characteristic (P × S) interactions in the prediction of behavioral states. In doing so, we take an etic approach (Cheung et al., 2011) by applying measures developed in one cultural context (mostly Western) across samples from various different cultural contexts. We focus on six personality traits (Big Five and Honesty-Humility), seven situation characteristics (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, and Sociality; Rauthmann et al., 2014), and three behavioral states (Agency, Enthusiasm, and Self-Negativity). We examine generalization across countries as well as the magnitude of country differences. Notably, we include a broad set of 15 country-level variables that could contribute to potential country differences in relations among elements of the Personality Triad. This encompasses many variables often referred to as "subjective elements of culture" (e.g., centering around shared values, norms, or role perceptions; Triandis, 1972—such as collectivism, self-construal, value orientations, and cultural tightness). This project thus yields a much-needed systematic examination of the entire Personality Triad across cultures.

## The Personality Triad

The Personality Triad (Funder, 2006) consists of three elements: persons, situations, and behaviors. In response to the person–situation debate (e.g., Allport, 1966; Epstein & O'Brien, 1985; Kenrick & Funder, 1988; Mischel, 1968), researchers emphasized that behavior can vary as a function of both persons and situations, as well as due to their interaction (e.g., Endler & Magnusson, 1976; Fleeson & Noftle, 2008; Funder, 2006). Funder (2006) proposed that all three elements of the Personality Triad can be understood in terms of the other two elements (e.g., behavior as a function of persons and situations). Notably, the simultaneous importance of persons and situations for behavior is reflected in various theoretical approaches in personality psychology (e.g., Back, 2021; Denissen & Penke, 2008; Fleeson & Jayawickreme, 2015; Geukes et al., 2018; Mischel & Shoda, 1995; Quirin et al., 2020; Tett & Guterman, 2000). Thus, understanding the interplay between elements of the Personality Triad is central to personality research.

In part as a result of the person–situation debate, personality psychology historically had a strong focus on examining personality trait structures and trait–outcome associations (e.g., Goldberg, 1993; McCrae & Costa, 1997; Ozer & Benet-Martínez, 2006). However, interest in the dynamics, processes, mechanisms, and functioning of personality has recently increased again (e.g., Baumert et al., 2017; Fleeson & Jayawickreme, 2021; Jayawickreme et al., 2021; Kuper et al., 2021a; Rauthmann, 2021a). This trend is intimately linked to a surge of research on, and a deeper integration of, situations in personality psychology (e.g., Funder, 2016; Horstmann et al., 2018; Parrigon et al., 2017; Rauthmann, Sherman, & Funder, 2015, 2020). Thus, research on the Personality Triad is currently flourishing.

In the present article, when examining the Personality Triad, we will focus on specific variables characterizing persons and situations rather than treating them categorically "as a whole" (e.g., variance due to persons/situations; see Kuper et al., 2024, for a systematic distinction). Specifically, for persons, we will focus on personality traits, and for situations, we will focus on situation characteristics. Concerning behavior as the third element of the Personality Triad, we will focus on behavioral state dimensions. Notably, when discussing previous relevant literature, we will often reference work examining psychological states more broadly (i.e., including but not always restricted to behavioral content). Finally, it should be acknowledged that each operationalization of a given element of the Personality Triad implemented here is based on self-report and thus reflects participants' subjective representations (i.e., subjective situation perceptions, explicit self-concepts of personality traits, perceived behavioral states; see, e.g., Back et al., 2009).

In the following, we describe the four key relations (including three associations and one interaction) among elements of the Personality Triad: S–B associations, P–B associations, P–S associations, and P × S interactions in the prediction of behavioral states.[2]

### *Situation Characteristic–Behavioral State (S–B) Associations*

The power of situational effects on behavior has been highlighted (e.g., Ross & Nisbett, 1991) and constitutes an important basis for much research in social psychology. However, systematic taxonomies and measures of situations have long been lacking, hindering research progress. Rauthmann, Sherman, and Funder (2015) distinguished three types of situational information: situation cues (i.e., physically present stimuli in the situation), situation characteristics (i.e., psychologically meaningful dimensions of perceived situations), and situation classes (i.e., types of situations with similar cue or class profiles). Especially for situation characteristics, which are the focus here, various taxonomies and measures have been proposed in the last years (e.g., Gerpott et al., 2018; Oreg et al., 2020; Parrigon et al., 2017; Rauthmann et al., 2014; Ziegler et al., 2019; for an overview, see Rauthmann & Sherman, 2020). For instance, the DIAMONDS taxonomy (Rauthmann et al., 2014) includes eight dimensions characterizing psychological situations: Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Deception, and Sociality. This

[2] The two other possible interaction effects (Behavior × Situation Characteristic interactions predicting traits, Trait × Behavior interactions predicting situation characteristics) were considered conceptually less plausible and relevant here and were thus not examined.

taxonomy was chosen here given that it is currently the most encompassing in terms of content and has been extensively examined in prior research in relation to both personality traits and momentary psychological states broadly (including behavioral states).

In the last few years, a large number of experience sampling/daily diary studies in everyday life have documented sizable associations (also often termed "contingencies") between situation characteristic measures and psychological states (including behavioral states; e.g., Abrahams et al., 2021; Breil et al., 2019; Columbus et al., 2021; Horstmann et al., 2021; Kuper et al., 2022; Quintus et al., 2021; Sherman et al., 2015). In addition to average associations, some work has focused on individual differences in associations between situation characteristics and states (see the P × S Interactions section; e.g., Fleeson, 2007; Kuper et al., 2022). While findings on links between situation characteristics and states using experience sampling data are correlative in nature, similar patterns were evident when using more controlled designs (e.g., standardized situation stimuli; Kuper et al., 2024). Moreover, most work has used self-reported psychological states, but some research has already partly extended prior findings to other-reported states (e.g., Abrahams et al., 2021; Breil et al., 2019; Kuper et al., 2022). Overall, there is thus firm evidence for meaningful links between psychological situation characteristics and (self-reported) states in these situations—though this evidence is mostly restricted to Western contexts (cf. Zhang et al., 2022).

Here, we focus on associations between the DIAMONDS situation characteristics (except Deception; Rauthmann et al., 2014)[3] and three behavioral state dimensions: Agency (e.g., "I dominated the situation"), Enthusiasm (similar to Extraversion but including less agentic content; termed Enthusiasm based on DeYoung et al., 2007; e.g., "I acted playful"), and Self-Negativity (e.g., "I said negative things about myself"). These dimensions were based on a factor analysis of an included behavior inventory (see the Method section for details). Two of the included dimensions can be interpreted with respect to the interpersonal circumplex (Wiggins, 1979), with Agency representing one axis and Enthusiasm being in-between agency and warmth (DeYoung et al., 2013). The Self-Negativity dimension further corresponds to findings from other work identifying an emotional (in-)stability factor for interpersonal behavior (Breil et al., 2023; Leising & Bleidorn, 2011).

Theoretically expected and unexpected combinations of situation characteristics and behavioral states can be distinguished (for a summary, see the Hypotheses section). We expected Agency to be positively linked to Duty and Intellect given the inclusion of content related to work ("I concentrated on or worked at a hard task.") and intelligence ("I exhibited a high degree of intelligence.") in the relatively broad Agency factor. For Enthusiasm, we refer to previously reported theoretical expectations for state Extraversion (e.g., Kuper et al., 2022): It should be negatively linked to Negativity and positively to pOsitivity, Mating, and Sociality. Last, Self-Negativity should be positively linked to Adversity and Negativity and negatively to pOsitivity, in line with previous expectations for state Neuroticism (Kuper et al., 2022).

### *Personality Trait–Behavioral State (P–B) Associations*

Various definitions of personality traits exist in the literature. These definitions often emphasize average tendencies of experience and behavior across time and situations (e.g., "individual differences in behavior, thought, and feeling that account for general consistencies across situations and over time": McAdams & Pals, 2006, p. 212). While more dynamic and contextualized trait conceptualizations exist in the literature (e.g., Denissen & Penke, 2008; Fleeson & Jayawickreme, 2015), the focus on average tendencies is reflected in most commonly used trait measures and will also be applied here. Conceptually, the relationship between personality traits and states with corresponding content reflects convergent validity of the trait and/or state measures (e.g., a valid measure of trait Extraversion should be linked to extraverted behavior; e.g., Breil et al., 2019).

Empirically, there is strong evidence for sizable associations between broad personality trait measures and psychological (including behavioral) states across various designs. For instance, personality traits predict behavior in economic games (e.g., Thielmann et al., 2020), smartphone-sensed behavior (e.g., Harari et al., 2020; Stachl et al., 2020), and observed behavior in laboratory situations (e.g., Back et al., 2009; Breil et al., 2021; Fetvadjiev et al., 2018). Most importantly for the present project, self-reported states in everyday life show considerable associations with personality trait measures (e.g., Finnigan & Vazire, 2018; Fleeson & Gallagher, 2009; Ringwald et al., 2022; Sherman et al., 2015). For instance, across eight data sets (Kuper et al., 2022; Matz & Harari, 2021), average convergent validity correlations between Big Five traits and single states yielded values around $r = .19$. Overall, there is thus strong evidence for P–B associations. However, especially work on cross-cultural similarities and differences in these associations is needed.

We here focus on the Big Five personality traits (John & Srivastava, 1999; Soto & John, 2017). Given its potential incremental validity, we further included Honesty-Humility from the HEXACO model (Ashton & Lee, 2009). Based on the interpersonal circumplex (Wiggins, 1979), previous empirical work (Barford et al., 2015; DeYoung et al., 2013), and item content, we formed several expectations concerning associations between traits and our three behavioral states (Agency, Enthusiasm, Self-Negativity; for a summary, see the Hypotheses section). Extraversion should be positively linked to both Agency and Enthusiasm, while Agreeableness should be (albeit less strongly) linked to Enthusiasm. For Conscientiousness, we expected an association with Agency because the latter includes content related to performance and work (e.g., "I concentrated on or worked at a hard task."). For Neuroticism, we expected a positive association with Self-Negativity, in line with previous empirical work (Stöber, 2003) and conceptual relations (Breil et al., 2023). Finally, we expected Honesty-Humility to be (negatively) associated with Agency but not with Enthusiasm (contrary to Agreeableness; Barford et al., 2015).

### *Personality Trait–Situation Characteristic (P–S) Associations*

Persons are intertwined with the environments they are in. For instance, Rauthmann (2021b) discussed several mechanisms that can underlie effects of persons on their situations (i.e., person → situation transactions), such as selection, modulation, or creation (see Buss, 1987; Scarr & McCartney, 1983, for similar suggestions).

[3] For Deception, only one potentially relevant item was available in the data set. Moreover, this item was focused on hostility rather than Deception per se. We thus decided to exclude this dimension.

Moreover, environments or repeated exposure to certain situations have been suggested to affect personality traits (i.e., situation → person transactions; Bleidorn et al., 2021; Wrzus & Roberts, 2017). Further, in addition to actually being exposed to different situations (i.e., situation contact), people can differ in their subjective perceptions of the same situation (i.e., situation construal; Rauthmann, Sherman, Nave, & Funder, 2015). Thus, several different mechanisms suggest potential associations between (measures of) personality traits and situation characteristics.

Empirically, P–S associations have been explored less frequently than P–B or S–B associations. Existing studies report some associations between traits and situation characteristics (simple associations: Kritzler et al., 2020; Kuper et al., 2021b; Rauthmann et al., 2014; Sherman et al., 2015; distinguishing construal and contact: Hong et al., 2020; Rauthmann, Sherman, Nave, & Funder, 2015). Notably, while these associations are expected, they should be somewhat smaller than P–B associations given the more direct link between traits and states (see Abrahams et al., 2021; Horstmann et al., 2021, for empirical findings descriptively in line with this).

Regarding expected associations, our hypotheses were based on conceptually predicted variable combinations used identically in prior work (e.g., Kuper et al., 2021b): We expected Extraversion to be positively linked to Mating, pOsitivity, and Sociality and negatively to Negativity; Agreeableness to be positively linked to Sociality and negatively to Adversity; Conscientiousness to be positively linked to Duty; Neuroticism to be positively linked to Adversity and Negativity and negatively to pOsitivity; Openness to be positively linked to Intellect; and Honesty-Humility to be negatively linked to Adversity.

### *Personality Trait × Situation Characteristic (P × S) Interactions*

The importance of Person × Situation interactions has become a truism in psychology, and various theoretical approaches highlight such interactions (e.g., Denissen & Penke, 2008; Mischel & Shoda, 1995; Tett & Guterman, 2000). Kuper et al. (2024) defined interactions such that persons or person variables moderate effects of situations or situation variables on an outcome, or vice versa (i.e., reserving the term for moderation effects and, e.g., not including person → situation transactions which are also sometimes termed interactions). Four different interaction effects with varying degrees of specificity can be distinguished: (a) broad Person × Situation variance (e.g., Endler & Hunt, 1966), (b) individual differences in situation variable–outcome associations (e.g., situation characteristic–state contingencies; Fleeson, 2007; Kuper et al., 2022), (c) situational differences in person variable–outcome associations (e.g., expected based on trait activation theory; Tett & Guterman, 2000), and most commonly, (d) Person Variable × Situation Variable interactions (here: P × S interactions) in the prediction of a given outcome. The evidence for, and magnitude of, these interaction effects varies: Person × Situation variance is often the largest variance source, and people differ considerably in situation characteristic–state contingencies, whereas situational differences in trait–state associations and especially P × S interactions are often small (for a detailed overview, see Kuper et al., 2024). In the present article, our focus will be on the most specific and most clearly interpretable fourth type of interaction effect (i.e., Personality Trait × Situation Characteristic interactions in the prediction of behavioral states).

Empirical research often finds few statistically significant P × S interaction effects (e.g., Abrahams et al., 2021; Kuper et al., 2022; Sherman et al., 2015; cf. Breil et al., 2019; Quintus et al., 2021). For instance, across five studies in everyday life, Kuper et al. (2022) found that the Big Five personality traits and Honesty-Humility did not consistently moderate within-person associations between DIAMONDS situation characteristics and Big Five personality states. In contrast, more statistically significant and some replicable interaction effects were observed when using standardized situation stimuli (i.e., pictures or videos of situations), but effect sizes again tended to be (very) small (Kuper et al., 2024).

Regarding expected variable combinations, we included undirected hypotheses for interaction effects of a given personality trait and situation characteristic in the prediction of a given behavioral state if all three possible variable combinations were also hypothesized to be related (i.e., S–B, P–B, and P–S; for an overview, see the Hypotheses section). Thus, we expected Conscientiousness to moderate the association of Duty with Agency; Extraversion to moderate the associations of Mating, pOsitivity, Negativity, and Sociality with Enthusiasm; Agreeableness to moderate the association of Sociality with Enthusiasm; and Neuroticism to moderate the associations of Adversity, pOsitivity, and Negativity with Enthusiasm.

## Culture and the Personality Triad

Most work on the Personality Triad has been conducted in Western contexts, and relatively little is known about the Personality Triad across cultures. This gap in the literature needs to be addressed both to understand (a) whether our findings about the Personality Triad are generalizable versus specific to certain cultural contexts and (b) how culture is expressed in differential relations between elements of the Personality Triad.

Various definitions of culture have been proposed in the literature. A recent and relatively inclusive definition comes from Lu et al. (2023, p. 365): Culture is "a system of symbols (what is represented), beliefs (what is considered true), values (what is considered important), norms (what is considered standard), and practices (what is performed) shared among a collection of interconnected individuals. Culture is continuously transmitted and reproduced through languages, media, institutions, and the like." As sources of culture, both ecological (e.g., pathogen prevalence, climate) and societal (e.g., population density, social institutions, socioeconomics) factors are emphasized (e.g., Gelfand et al., 2011; Kitayama & Salvador, 2024; Lu et al., 2023).

Notably, culture pertains to different types of groups of individuals, and none of these groups should be considered homogeneous. To name only a few examples, culture has been used to refer to ethnicity, countries, regions within countries, social class/socioeconomic status, and religion (Cohen, 2009). In line with much previous work, we here use country as the level at which we empirically examine culture. We acknowledge that this only refers to one aspect of culture and that there is cultural variation within countries (i.e., "country differences" are just one specific instantiation of "cultural differences"). Here, we examine similarities as well as differences in the Personality Triad across countries. Importantly, going beyond much cross-cultural work focusing only on differences between countries, we consider the extent to which these differences are associated with a broad range of cultural

dimensions on which countries vary (see the Relevant Cultural Dimensions section).

Theoretical perspectives suggest that culture should affect the interplay between persons, situations, and/or behavior. To name a few approaches, the sociocultural norm perspective (Eck & Gebauer, 2022; earlier: sociocultural motives perspective, Gebauer et al., 2014) suggests that specific Big Five traits should be more/less strongly associated with outcomes (including behavior) depending on the degree to which these outcomes are socioculturally normative. Person–culture match perspectives (e.g., Fulmer et al., 2010) suggest that effects of personality traits on outcomes differ depending on average personality trait levels in a culture. Matsumoto (2007) proposed a model suggesting that culture gives meaning to situational contexts, resulting in expectations about normative behavior in a given situation (yielding culture-specific social roles)—which implies that situational effects on behavioral states should differ across cultures. The Culture × Person × Situation approach (Leung & Cohen, 2011; see Mendoza-Denton & Mischel, 2007, for a related application of the Cognitive Affective Processing System model to culture) emphasizes the need to consider interactions between culture, personality, and psychological situations, also highlighting that culture gives meaning to situations and behaviors. According to this approach, the same individual difference variable may be linked to different or even opposing behaviors in different cultures—and even interactions between traits and situational variables should vary across cultures. Finally, most relevant to the Personality Triad across cultures, Church (2000, 2009) proposed an integrated cultural trait psychology, which aims to unite trait–psychological and cultural–psychological approaches. Core elements of this approach include the existence of cultural differences in links between situational factors and behavior as well as in the cross-situational consistency of behavior and its predictability from personality traits. Notably, these cultural differences are predicted to be associated with certain cultural dimensions (e.g., individualism–collectivism). Whereas personality traits should be linked to behavioral states in all cultures, these links should depend on relevant cultural dimensions.

### *Relevant Cultural Dimensions*

Various dimensions along which cultures differ from each other have been proposed in the literature, and often, theoretical approaches are centered around such dimensions. These dimensions are often referred to as the "subjective elements of culture" (Triandis, 1972). Notably, definitions of several cultural dimensions highlight that they are immediately relevant to cultural differences in the Personality Triad.

**Collectivism.** A highly influential aspect of culture concerns individualism–collectivism (e.g., Hofstede, 1980; Triandis, 1995). For instance, Hofstede (2011) defined individualism–collectivism as a single culture dimension that reflects the extent to which people are integrated into strong in-groups. In more individualistic cultures, people are seen as more autonomous, whereas collectivistic cultures emphasize strong ties to one's in-group (i.e., a high importance of relationships). This is also associated with more independent (individualism) and interdependent (collectivism) self-construal, respectively (Kitayama & Salvador, 2024; see the Self-Construal section). Some issues have arisen in prior work concerning the differentiation of cultures alongside measures of individualism–collectivism (Talhelm, 2019). This is likely in part attributable to methodological effects (Heine et al., 2002), but it was also proposed that improved conceptualizations are required. Here, we adopt a refined operationalization of collectivism (also termed responsibilism) focusing on responsibilities toward close others (A. S. English et al., 2023; Talhelm, 2021). Notably, based on definitions of individualism–collectivism, it follows that personality traits should be linked to behavioral states more strongly in individualistic cultures (highlighting autonomy, an independent self, and the importance of personal attributes), whereas situational effects on behavioral states should be stronger in collectivistic cultures (highlighting, for instance, social interdependence and social roles; Church, 2000, 2009; Triandis, 1995).

**Self-Construal.** A further central aspect along which cultures can be differentiated is self-construal. Most prominently, Markus and Kitayama (1991) proposed the distinction of construal of the self as independent (i.e., separate from the social context) and interdependent (i.e., connected to the social context). This distinction is strongly related to collectivism (interdependent self-construal) and individualism (independent self-construal), respectively, and often viewed as the same dimension (Kitayama & Salvador, 2024). Notably, independent construals of the self have been argued to imply stronger effects of internal individual differences (i.e., traits), whereas interdependent construals imply more variability across contexts (i.e., situational effects; e.g., Church, 2000; Markus & Kitayama, 1998). In a recent study, Vignoles et al. (2016) systematically examined different aspects proposed to belong to more independent or interdependent self-construals. Both within and between cultures, they found a more complex multifactorial structure underlying self-construal (i.e., rejecting a one-dimensional conceptualization of independence vs. interdependence). Here, we were able to include three dimensions of self-construal, which were assessed in the data set analyzed. Each of these dimensions was relevant to the Personality Triad: consistency versus variability, self-expression versus harmony, and self-interest versus commitment to others, and we expected each dimension to be associated with stronger P–B and weaker S–B associations, respectively.

**Values.** A core focus of previous work examining dimensions along which cultures differ is value orientations (Hofstede, 1980; Inglehart & Baker, 2000; Schwartz, 2006). Values have been so dominant in the literature that some scholars have even criticized an almost exclusive focus on values (e.g., Gelfand et al., 2006). Notably, the model by Schwartz (2006) is distinct insofar that it is based on a priori theorizing and organizes clearly interpretable cultural value orientations alongside a circular structure. It encompasses seven cultural value orientations, which we also examine here: harmony (e.g., protecting the environment), embeddedness (e.g., social order), hierarchy (e.g., authority), mastery (e.g., choosing one's own goals), affective autonomy (e.g., enjoying life), intellectual autonomy (e.g., creativity), and egalitarianism (e.g., social justice). With regard to individualism–collectivism, especially affective and intellectual autonomy (individualism) and embeddedness (collectivism) show strong conceptual and empirical links (Schwartz, 2014). Based on the definitions of the value orientations, we expected cultures characterized by higher hierarchy (e.g., stronger obligations to comply with specific roles; Schwartz, 2014) and embeddedness (linked to collectivistic values) to be associated with stronger S–B and weaker P–B associations, respectively. While inverse associations would be expected with autonomy (which is opposite of embeddedness in the circular structure; Schwartz, 2006), we did not formulate this

as a hypothesis given the specific focus on intellectual and affective content.

**Tightness.** In addition to the previously discussed cultural dimensions, which often focus on internal aspects (e.g., self-construals, values), scholars have further highlighted the importance of cultural differences in external influences on behavior. Specifically, cultures differ in the strength of social norms, reflected in a tightness–looseness dimension, with tight cultures having stronger social norms and sanctioning deviations from these norms more strongly (Gelfand et al., 2006; Triandis, 1989). Whereas individualism–collectivism is often conceptualized as closely linked to independent/interdependent self-construal as well as the relative emphasis on personal attributes versus social roles (Church, 2009), tightness specifically focuses on the strength of social norms as an external aspect of culture. It is thus conceptualized to be distinct from individualism–collectivism, although a moderate relationship exists, with collectivistic cultures showing higher tightness (Gelfand et al., 2006; Uz, 2015). Importantly for the present project, it is theorized that tightness is associated with a higher prevalence of strong versus weak situations in everyday life (given stronger social norms; Gelfand et al., 2011). In turn, behavioral variability is expected to be higher in loose cultures. This leads us to expect stronger S–B and weaker P–B associations in cultures characterized by higher tightness.

**Additional Variables.** In addition to the aforementioned variables, we here consider three further country-level variables. First, happiness/well-being at different levels of aggregation shows meaningful relations with elements of the Personality Triad (e.g., Horstmann et al., 2021; Kritzler et al., 2020) and has been studied cross-culturally (e.g., Gardiner et al., 2020), especially on the country level (e.g., Diener & Lucas, 2000; Ye et al., 2015). Importantly, two different conceptualizations of happiness are relevant here: independent happiness (Lyubomirsky & Lepper, 1999) and interdependent happiness (Hitokoto & Uchida, 2015), the latter of which is specifically focused on more relational aspects of happiness (e.g., "I feel that I am being positively evaluated by others around me"). In addition to happiness, we further include the national socioeconomic status (similar to Gardiner et al., 2023), operationalized using the Human Development Index, which is a composite measure of standard of living, life expectancy, and educational opportunities (United Nations, 2017). This measure showed sizable associations with various variables relevant to the present project (e.g., positivity of situational experiences: Gardiner et al., 2023; individualism, autonomy, and embeddedness [inversely]: Gaygısız, 2013; see additional online Table S11 for substantial main effects on situation characteristics and behavioral states and additional online Table S4 for sizable correlations with other country-level variables in the present data at https://osf.io/c4emf/files/ukqd7). Both happiness (independent and interdependent) and the national socioeconomic status were examined exploratorily here, such that no specific hypotheses were formulated.

### *Prior Empirical Work Across Cultures*

Much work examining personality across cultures has focused on the structure of trait descriptions (e.g., McCrae & Allik, 2002; Saucier & Goldberg, 2001; Thalmayer & Saucier, 2014). In contrast, most work examining the interplay between elements of the Personality Triad has been conducted in Western contexts (but see Baranski et al., 2017; Guillaume et al., 2016; Lee et al., 2020, for systematic cross-cultural investigations of single elements of the Personality Triad). Nevertheless, some studies examining relations between personality traits, situational variables, and states (including behavioral states) across cultures exist. In the following, we mostly focus on states with similar content or levels of abstraction as personality trait measures (i.e., not including other outcomes such as religiosity on which more cross-cultural work exists; e.g., Gebauer et al., 2014).

In prior work, personality traits and states have typically been similarly linked across different countries and ethnicities, a pattern that appears across designs (e.g., cross-sectional trait role questionnaires, daily diary, experience sampling, laboratory observation; e.g., Ching et al., 2013, 2014; Church, Anderson-Harumi, et al., 2008; Church et al., 2007; Church, Katigbak, et al., 2008; Fetvadjiev et al., 2018). Despite similarities across countries, some studies found cultural differences in P–B associations, but these cultural differences often did not conform to theoretical expectations (e.g., not showing stronger trait effects in more individualistic cultures). Importantly, however, the number of countries/ethnicities across which cultural differences have been examined was typically relatively small (e.g., two to six in the work cited previously). This prevents firm conclusions about cross-cultural similarities and differences as well as about links between cultural dimensions and P–B associations.

The prior picture concerning links between situational variables and states is similar, with only some differences across a relatively small number of countries/ethnicities that often did not fully correspond to expectations based on cultural dimensions such as collectivism (e.g., Ching et al., 2013; Church et al., 2013; Church, Anderson-Harumi, et al., 2008; Church, Katigbak, et al., 2008; Fetvadjiev et al., 2018; Funder et al., 2012). Moreover, work specifically focusing on the DIAMONDS across different Western samples is somewhat contradictory (e.g., Kuper et al., 2022: descriptively stronger effects of situation characteristics in German than U.S.-American samples; Rauthmann et al., 2014: descriptively stronger effects in an Austrian compared to U.S.-American sample; Kuper et al., 2024: descriptively stronger effects in a U.S.-American compared to German sample).[4] Again, work with a much larger number of countries is needed.

Much less research has been conducted on P–S associations across cultures, especially when focusing on relatively recent taxonomies of situation characteristics. For instance, Rauthmann et al. (2014) and Rauthmann, Sherman, Nave, and Funder (2015) found some replicable patterns in associations between traits and situation characteristics across an Austrian and U.S.-American sample. Nezlek et al. (2011) reported some differences in relations between the Big Five and aspects of social interactions across a German and U.S.-American sample. The vast majority of work on links between personality traits and situation characteristics has been conducted solely in Western contexts. Similarly, little is known about P × S interactions in the prediction of states across cultures. Interaction effects examined in Western contexts are often inconsistent and (very) small (e.g., Kuper et al., 2022; Kuper et al., 2024; Sherman et al., 2015; cf. Quintus et al., 2021). One cross-cultural investigation is reported by Leung and Cohen (2011), introducing the Culture × Person × Situation approach, but their examination

[4] Note, however, that other design differences across samples could have played a role in these descriptive patterns.

included quite specific person, situation, and behavioral variables (i.e., the generalization to common personality trait and situation characteristic taxonomies remains unclear).

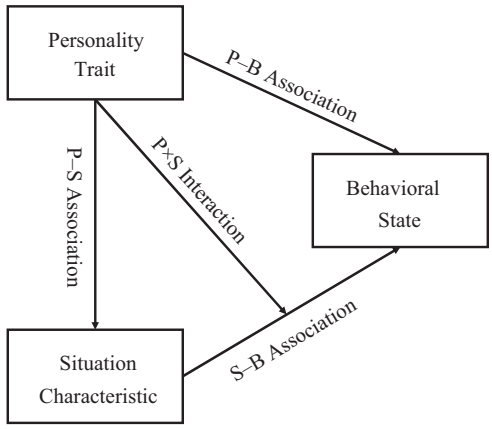
In sum, there appears to be a considerable discrepancy between existing empirical work and theoretical approaches, which lead us to expect cross-cultural differences in relations between elements of the Personality Triad and links of these differences with specific cultural dimensions. The typically small number of countries in prior work limits generalizable conclusions about the role of cultural dimensions. Moreover, what is deeply needed is a simultaneous examination of relations between all elements of the Personality Triad. This way, different associations (e.g., S–B and P–B) can be directly compared in a methodologically parallel fashion using the same samples of participants. This allows a clean test of theoretical expectations suggesting that certain associations should be stronger in some cultures (e.g., S–B in collectivistic cultures), whereas other associations should be weaker in these cultures (e.g., P–B). To yield informative and generalizable findings, it is necessary to systematically examine the interplay between all elements of the Personality Triad across a large number of countries using broad measures of personality traits, situation characteristics, and behavioral states, while also including a large array of theoretically relevant cultural dimensions.

## The Present Study

The present study seeks to provide a systematic portrayal of relations between personality traits, situation characteristics, and behavioral states across 61 countries and one geographic region (Hong Kong), using data from the International Situations Project (e.g., Lee et al., 2020). This project encompasses samples from a variety of cultural contexts, including non-Western countries and countries at varying stages of economic development. Participants completed a situation description task (see below), which required them to remember one situation from their previous day and answer questions about it. Our study takes an etic approach (Cheung et al., 2011) insofar that measures developed in one cultural context were applied in various other cultural contexts. We focus on six personality traits (Big Five and Honesty-Humility), seven self-reported situation characteristics (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, and Sociality; Rauthmann et al., 2014), and three dimensions of self-reported behavioral states (Agency, Enthusiasm, and Self-Negativity). Importantly, we also include 15 country-level variables as potential moderators that might contribute to country differences in relations among elements of the Personality Triad: collectivism, three dimensions of self-construal (self-expression vs. harmony, self-interest vs. commitment to others, consistency vs. variability), the seven cultural value orientations from Schwartz (2006; embeddedness, intellectual autonomy, affective autonomy, harmony, egalitarianism, hierarchy, mastery), cultural tightness, independent and interdependent happiness, and the national socioeconomic status. Thus, going beyond work only investigating country differences, we further systematically explore their relations with a broad range of country-level variables, many of which pertain to "subjective elements of culture" (Triandis, 1972). Overall, using these data, we seek to answer four research questions (RQs), each representing one relation between elements of the Personality Triad. Figure 1 provides an overview of these RQs.

**Figure 1**

*Overview of the Personality Triad and Four Relations*




*Note.* Shown is an overview of the Personality Triad, including the four relations among its elements as operationalized in this study. P–B = personality trait–behavioral state; P–S = personality trait–situation characteristic; S–B = situation characteristic–behavioral state; P × S = Personality Trait × Situation Characteristic.

*RQ1—S–B Associations Across Countries:* To what extent do associations between situation characteristics and behavioral states vary across countries (RQ1a), and to what extent are these differences associated with country-level predictors (RQ1b)?

*RQ2—P–B Associations Across Countries:* To what extent do associations between personality traits and behavioral states vary across countries (RQ2a), and to what extent are these differences associated with country-level predictors (RQ2b)?

*RQ3—P–S Associations Across Countries:* To what extent do associations between personality traits and situation characteristics vary across countries (RQ3a), and to what extent are these differences associated with country-level predictors (RQ3b)?

*RQ4—P × S Interactions Across Countries:* To what extent do P × S interactions in the prediction of behavioral states vary across countries?[5]

### *Hypotheses*

While we examine relations between combinations of all variables, we systematically distinguish theoretically expected and unexpected effects. Table 1 provides an overview of our expectations, which were justified in detail previously.

[5] In line with the preregistration, no country-level moderators of P × S interactions were examined. This would represent complex three-way interactions for which statistical power is unlikely to be sufficient. Further, this strategy is congruent with the empirical finding of few statistically significant average P × S interactions and little evidence for country differences in P × S interactions (see the Results section).

**Table 1**
*Overview of Theoretically Expected Variable Combinations*

| | S–B association | | |
|---|---|---|---|
| Situation characteristic | Agency | Enthusiasm | Self-negativity |
| Duty | + | | |
| Intellect | + | | |
| Adversity | | | + |
| Mating | | + | |
| pOsitivity | | + | − |
| Negativity | | − | + |
| Sociality | | + | |

| | P–B association | | |
|---|---|---|---|
| Personality trait | Agency | Enthusiasm | Self-negativity |
| Extraversion | + | + | |
| Agreeableness | | + | |
| Conscientiousness | + | | |
| Neuroticism | | | + |
| Openness | | | |
| Honesty-humility | − | | |

| | P–S association | | | | | |
|---|---|---|---|---|---|---|
| Situation characteristic | Extraversion | Agreeableness | Conscientiousness | Neuroticism | Openness | Honesty-humility |
| Duty | | | + | | | |
| Intellect | | | | | + | |
| Adversity | | − | | + | | − |
| Mating | + | | | | | |
| pOsitivity | + | | | − | | |
| Negativity | − | | | + | | |
| Sociality | + | + | | | | |

| | P × S interaction | | |
|---|---|---|---|
| Situation characteristic | Agency | Enthusiasm | Self-negativity |
| Duty | × Conscientiousness | | |
| Intellect | | | |
| Adversity | | | × Neuroticism |
| Mating | | × Extraversion | |
| pOsitivity | | × Extraversion | × Neuroticism |
| Negativity | | × Extraversion | × Neuroticism |
| Sociality | | × Extraversion | |
| | | × Agreeableness | |

| | Moderation by country-level variable | | |
|---|---|---|---|
| Country-level variable | S–B association | P–B association | P–S association |
| CVO: Harmony | | | |
| CVO: Embeddedness | + | − | |
| CVO: Hierarchy | + | − | |
| CVO: Mastery | | | |
| CVO: Affective autonomy | | | |
| CVO: Intellectual autonomy | | | |
| CVO: Egalitarianism | | | |
| Collectivism | + | − | |
| Tightness | + | − | |
| SC: Self-expression | − | + | |
| SC: Self-interest | − | + | |
| SC: Consistency | − | + | |
| Independent happiness | | | |
| Interdependent happiness | | | |
| National socioeconomic status | | | |

*Note*. The symbol "+" indicates that we expected a positive association; the symbol "−" indicates that we expected a negative association; CVO = cultural value orientation dimension from Schwartz (2006); SC = self-construal dimension from Vignoles et al. (2016). For Personality Trait × Situation Characteristic interactions, hypotheses are undirected and were based on variable combinations where all three associations (S–B, P–B, P–S) were expected. S–B = situation characteristic–behavioral state; P–B = personality trait–behavioral state; P–S = personality trait–situation characteristic.

# Method

## Sample and Procedure

The data collection for the International Situations Project (Lee et al., 2020) received approval by the Institution Review Board of the University of California (HS-1-046: The International Situations Project). Participants were members of local college/university communities (largely students) from various countries. They were asked to recall a situation from the previous day that they could remember well and reported on the characteristics of, and their behavioral states in, this situation (see the Measures section). Moreover, participants provided data on their personality traits as well as the following measures that were aggregated to yield country-level variables: self-construal, independent and interdependent happiness, and cultural tightness. Additional information on the procedure and further assessed variables that are not relevant here can be found at https://osf.io/yv2nq/ (Baranski et al., 2020).

As preregistered, we excluded participants who gave identical responses to all items of the Big Five Inventory–2 (BFI-2; Soto & John, 2017), indicating careless responding, and data from countries with less than 50 participants. Moreover, data from Uganda had to be excluded because the situation characteristic data were an extreme outlier (see discussion in Lee et al., 2020), likely attributable to unintended methodological artifacts.[6] Overall, we included $N$ = 15,221 participants from 61 countries and one geographic region (Hong Kong) across six continents. In the following, we will use "country" to refer to both countries and the geographic region, for brevity. The sample size per country ranged from 50 to 1,360 participants ($Mdn$ = 183). The number of countries with available data for specific country-level variables ranged from 55 to 62 ($Mdn$ = 58). Finally, due to rare cases of missing values, the number of participants for different elements of the Personality Triad ranged from 15,194 to 15,221.

Participants reported an average age of 21.84 years ($SD$ = 4.53, range = 16–67 years). Moreover, 70.47% of participants identified as female, 29.01% as male, 0.25% identified with another gender identity, and 0.27% did not disclose their gender identity. Further, participants reported on their family's socioeconomic status using a scale from 1 = *least well off* to 10 = *most well off*, yielding an average of $M$ = 6.16 ($SD$ = 1.54). For an overview of descriptive information broken down by country, see additional online Table S1 (https://osf.io/c4emf/files/ukqd7). Notably, subjective socioeconomic status varied across countries ($SD$ = 0.52), with country averages ranging from 5.05 to 7.42 (midpoint of the scale = 5.5). This suggests that despite our sampling strategy, yielding samples mostly consisting of university/college students, systematic country differences in socioeconomic status are still reflected in our data.

## Measures

In the following, we describe the measures included in the present study. For an overview, see additional online Table S2 (https://osf.io/c4emf/files/ukqd7). For descriptive information and further details, see additional online Tables S3–S7 (https://osf.io/c4emf/files/ukqd7).

### *Personality Traits*

We included the BFI-2 as a 60-item measure of the Big Five personality traits (Soto & John, 2017). In addition, we included a 10-item Honesty-Humility measure based on the HEXACO-60 (Ashton & Lee, 2009). Self-reported personality traits were assessed using 5-point rating scales. Reliability estimates were ω = .82 (Extraversion), ω = .77 (Agreeableness), ω = .84 (Conscientiousness), ω = .86 (Neuroticism), ω = .80 (Openness), and ω = .70 (Honesty-Humility).

### *Situation Description Task*

In the International Situations Project, participants were directed to a website where they were asked to recall and answer questions about a situation from the previous day. Specifically, they were instructed to "Please describe an experience yesterday that you remember well." Participants indicated at which time this situation began and provided open text responses on what they were doing, where they were, and who else was present. This was followed by an assessment of situation characteristics and behavior in that situation (see below for details). Similar tasks have been successfully applied in previous work, often asking about a situation at a specific time of the previous day (e.g., Guillaume et al., 2016; Rauthmann et al., 2014). Since some participants reported not remembering their situation at such a specific time, however, the present data collection focused on one situation they could remember well instead (see Lee et al., 2020, for a discussion). Previous work using the International Situations Project data (e.g., Gardiner et al., 2023; Lee et al., 2020) as well as our own results (see below) generally indicates sensible performance of the assessed measures (e.g., links with other measures), providing initial evidence relevant to the task's validity.

**Situation Characteristics.** The International Situations Project included an updated 90-item version of the Riverside Situational Q-sort (Lee et al., 2020). Specifically, 90 different statements about the situation were presented (e.g., "A job needs to be done"), and participants had to place them into one of three boxes: uncharacteristic, neutral, and characteristic for the situation. Afterward, statements from these three boxes had to be placed into nine boxes, ranging from extremely uncharacteristic to extremely characteristic. This nine-category Q-sorting procedure forced a quasinormal distribution of items within participants (e.g., the extremely uncharacteristic category was limited to three statements, the quite uncharacteristic category to six statements, and the fairly uncharacteristic category to 11 statements; for details, see https://osf.io/wft8k). To derive measures of situation characteristics, we retained items relevant to seven DIAMONDS dimensions: Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, and Sociality (Rauthmann et al., 2014). Deception had to be excluded since it could not be represented well by the assessed

[6] In Uganda, the data from the Riverside Situational Q-sort were clear outliers with respect to the average situational experience, which was highly dissimilar to that from the other countries (Lee et al., 2020). Moreover, correlations among the different Riverside Situational Q-sort items were also not similar to those observed in other countries as estimated using the method from Gardiner et al. (2019), again being a clear outlier.

items. We retained items that were identical or similar in content to the top four items for each factor identified by Rauthmann et al. (2014). Item examples are "A job needs to be done" (Duty), "The situation could be intellectually stimulating" (Intellect), "Someone is criticizing you" (Adversity), "Your physical attractiveness is important" (Mating), "The situation is potentially enjoyable" (pOsitivity), "The situation could make people tense and upset" (Negativity), and "Social interaction is possible" (Sociality). Overall, we included 23 items with three to four items per dimension (see additional online Table S5 for the included items and additional online Table S3 for descriptive statistics at https://osf.io/c4emf/files/ukqd7).[7]

**Behavioral States.** Participants were asked to rate their own behavior in the situation they described. Self-reported behavioral states were assessed with a 16-item brief version of the Riverside Behavioral Q-sort (Funder et al., 2000) using a 9-point rating scale. To assess the factor structure of this inventory, we conducted an exploratory factor analysis with oblimin rotation on the total correlation matrix across participants and countries. Of the one- to six-factor solutions, the four-factor solution was deemed most clearly interpretable. This factor solution was robust across a variety of alternative analysis techniques.[8] Based on the factor solution, we excluded two items with unclear loading patterns (highest secondary loading not at least .10 smaller than the primary loading). Moreover, we excluded one factor comprised of two items assessing physical activity given that we deemed this factor less psychologically relevant and less suitable for an examination of the Personality Triad than the other factors. Thus, we retained 12 items for three behavioral state dimensions (see additional online Table S7 for the final factor solution at https://osf.io/c4emf/files/ukqd7).

First, Agency consisted of agentic behavioral states, including content related to dominance, performance, intelligence, and work (e.g., "I dominated the situation"; "I concentrated on or worked at a hard task"). This factor represented a relatively broad conceptualization of Agency (see, e.g., Entringer et al., 2022). Second, Enthusiasm consisted of behavioral states related to less agentic aspects of Extraversion (e.g., "I acted playful"). We hence termed it "Enthusiasm" in line with DeYoung et al. (2007). Third, Self-Negativity reflected negative expressions pertaining to the self (e.g., "I said negative things about myself"; for details, see additional online Table S6 at https://osf.io/c4emf/files/ukqd7). Two of the three factors can be interpreted with respect to the interpersonal circumplex (Wiggins, 1979; with Enthusiasm in-between agency and warmth), and the third is conceptually related to emotional (in-) stability factors emerging in factor analyses of interpersonal behavior (e.g., Breil et al., 2023; Leising & Bleidorn, 2011). For descriptive statistics, see additional online Table S3 (https://osf.io/c4emf/files/ukqd7). Reliability estimates of the behavioral state dimensions were $\omega = .75$ (Agency), $\omega = .59$ (Enthusiasm), and Rel = .58[9] (Self-Negativity). Reliability estimates of this magnitude are to be expected for scales with few items (six, four, and two for Agency, Enthusiasm, and Self-Negativity, respectively), especially if the items capture nonredundant aspects of a broader behavioral construct. Importantly, much previous work assessing self-reported psychological states focused on one-item measures (e.g., Horstmann et al., 2021; Kuper et al., 2022; Sherman et al., 2015), and within-person reliabilities[10] of multi-item state measures are often lower than our estimates (see, e.g., Ringwald et al., 2022). Thus, we deemed the reliabilities acceptable for self-reported behavioral states in a given situation.

### *Country-Level Variables*

The following country-level variables were assessed for each participant of the data collection and averaged to yield country means. First, we included a six-item measure (5-point rating scale) of cultural tightness consisting of questions about participants' country (e.g., "People agree upon what behaviors are appropriate versus inappropriate in most situations in this country"; Gelfand et al., 2011). Moreover, we included three dimensions of self-construal: self-expression versus harmony (e.g., "You prefer to express your thoughts and feelings openly, even if it may sometimes cause conflict"), self-interest versus commitment to others (e.g., "You protect your own interests, even if it might sometimes disrupt your family relationships"), and consistency versus variability (e.g., "You see yourself the same way even in different social environments") from Vignoles et al. (2016), assessed with four to five items each using a 9-point rating scale. Last, we included independent happiness using the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999; 7-point scale) and interdependent happiness using the Interdependent Happiness Scale (e.g., "I feel that I am being positively evaluated by others around me"; Hitokoto & Uchida, 2015; 5-point scale).

In addition, the following country-level variables were included by merging the data set with existing data from external sources. To measure collectivism, we included country averages of a recently developed refined collectivism scale emphasizing responsibilities toward close others (also "responsibilism"; A. S. English et al., 2023; Talhelm, 2021). Data were available for 55 of the included countries. To measure cultural value dimensions, we included country averages of seven cultural value orientations (embeddedness, intellectual autonomy, affective autonomy, harmony, egalitarianism, hierarchy, mastery; Schwartz, 2006), as reported by Schwartz (2008), which were available for 58 countries. Last, as a measure of the national socioeconomic status, we included the Human Development Index, which comprises standard of living, life expectancy, and educational opportunities (United Nations, 2017) and was available for 61 of the included countries. Overall, we thus included 15 country-level variables, six of which were assessed for participants from the International Situations Project and nine of which were based on external data. For descriptive information and correlations, see additional online Table S4 (https://osf.io/c4emf/files/ukqd7).

[7] Reliabilities for the DIAMONDS measures were not calculated here since the Q-sort nature of the data can yield singular correlation matrices and necessitates negative average interitem correlations (Ozer, 1993). This renders, for instance, factor analyses inappropriate and would yield a distorted picture of reliability coefficients such as ω.

[8] This includes factor analyses using (a) the within-country correlation matrix weighted by sample size, (b) the within-country correlation matrix with each country weighted identically, and (c) promax rotation or varimax rotation, as well as (d) principal component analysis.

[9] Since this dimension consisted of two items, reliability was calculated as a Spearman–Brown-corrected interitem correlation instead (Eisinga et al., 2013).

[10] Note that our reliability estimates are based on one situation per person, such that between-person and within-person variance cannot be distinguished here (see the Strengths, Limitations, and Future Directions section).

## Measurement Across Countries

All measures were translated to allow participants to fill out the study in their preferred language. Translations of the original measures were made by local psychologists who were native speakers of the target language (members of the International Situations Project). By an independent researcher, these translations were subsequently back-translated to English, which was then critically compared with the original English version to ensure accuracy (see, e.g., Gardiner et al., 2020; Lee et al., 2020; translated measures are available at https://osf.io/yv2nq/). Any discrepancies found were discussed between collaborators until a suitable translation was agreed upon. Overall, 42 different languages were included.

To ensure data quality, we investigated potentially problematic items that behaved differently across languages. The fifth BFI-2 item had to be excluded because it resulted in frequent translation issues ("few artistic interests" vs. "a few artistic interests") that changed the meaning of the item in several cases. We further manually investigated item–language combinations, inspecting their country-specific averages (in relation to the scale midpoint), the vector correlation of their associations with other items in one compared to all other countries, and their translations. Based on this, we made conservative case-by-case decisions (i.e., retaining items as-is unless clear problems were apparent). In rare cases (14 item–language combinations), items had to be replaced by predicted values based on other items from the same (sub-)scale, and in one case, an item had to be reversed. These 15 modifications should address strongly outlying item–language combinations. Note, however, that this procedure has most likely very little impact on the results (e.g., only 0.4% of all item–language combinations from the BFI-2 were modified).

Regarding the equivalence of measurement across countries, classical approaches based on confirmatory factor analyses (CFAs) are not ideally suited for the present data (but are nevertheless presented for comparability; see below). This specifically pertains to the Q-sort nature of the situation characteristic data (rendering factor analysis inappropriate; Ozer, 1993) and sample size recommendations for multigroup CFA (e.g., $N > 200$ per country, which is achieved in less than half of the countries; Pendergast et al., 2017). Importantly, concerns about traditional measurement invariance tests and in particular academic conventions centered around their use have been raised (e.g., Funder & Gardiner, 2024). Thus, for our main examination of measurement similarity, we instead implemented a method proposed by Gardiner et al. (2019). In this method, the complete item intercorrelation matrix is computed for each country and resulting unique correlations are vector-correlated across countries.[11] The resulting values represent the extent to which interitem correlations are similar across two countries. Further, country averages (how similar is this country compared to all other countries?) and an overall average (how similar are countries on average?) can be computed. This latter overall average can then be compared to a permutation-based average (here: 2,500 iterations) obtained by randomly reassigning the country variable to the different rows in the data set, yielding an upper limit for the overall average similarity if nesting in country was irrelevant.

For the trait measures (Big Five and Honesty-Humility; see additional online Table S8 at https://osf.io/c4emf/files/ukqd7), we observed an average similarity of interitem correlations of $r = .69$ across countries, with the permutation-based upper limit being $r = .79$ (see Gardiner et al., 2019, for nearly identical findings when focusing on the Big Five). For the behavioral state measure (see additional online Table S9 at https://osf.io/c4emf/files/ukqd7), the average similarity was $r = .64$, with the permutation-based upper limit being $r = .77$. Finally, for the situation characteristics (see additional online Table S10 at https://osf.io/c4emf/files/ukqd7), the average similarity was $r = .71$, and the permutation-based upper limit was $r = .79$. Overall, there was thus evidence for a high average similarity of interitem correlations across the included countries for all measures. Nevertheless, in line with Gardiner et al. (2019), nesting in country was not fully irrelevant as indicated by the somewhat larger permutation-based values. This suggests that items likely perform similarly but not completely identically across countries, a finding that is highly in line with cross-cultural comparisons of measurement (e.g., Funder & Gardiner, 2024) and that can in itself reflect substantive cultural differences (e.g., in trait structure; Durkee et al., 2022).

For comparability with previous work, we additionally include traditional tests of metric measurement invariance in our additional online materials (https://osf.io/c4emf/). Briefly, we implemented multigroup CFA whenever suitable for our measures.[12] Overall, results (see additional online Table S34 at https://osf.io/c4emf/files/ukqd7) yielded a nuanced picture depending on the model specification, variables in question, and especially fit indices considered (with some fit indices supporting metric invariance and others not at commonly applied thresholds). This is in line with our previous main analysis supporting high but not perfect measurement similarity across countries. For recent, closely related discussions on measurement invariance testing in research across cultures, see, for example, Funder and Gardiner (2024), Meuleman et al. (2023), Robitzsch and Lüdtke (2023), and Welzel et al. (2023).

We believe that a systematic descriptive portrayal of the relations between personality traits, situation characteristics, and behavioral states across the large number of countries is valuable and informative (especially since one main finding is the high similarity in relations across countries—despite any potential measurement dissimilarities; see the Results section). However, findings should of course be interpreted with caution, keeping the possibility of measurement issues in mind—something that is not unique to cross-cultural comparisons but rather applies to psychological research more broadly (e.g., also when examining individual differences in intra-individual dynamics; Beck & Jackson, 2020; Kuper et al., 2022). Finally, to ensure that our findings are not attributable to some multi-item dimensions not "working" well in some countries (e.g., because items are not correlated), we also investigate the

[11] Note that for these analyses, problematic country–item combinations that had to be modified (e.g., replaced with predicted values) were treated as missing values. The method was implemented (a) across all available data using pairwise complete correlations, (b) while excluding items that were mostly missing in at least one country, and (c) while excluding countries for which at least one item was mostly missing. Results were highly similar, and we focus on the first approach in the main text (for details, see additional online Tables S8–S10 at https://osf.io/c4emf/files/ukqd7).

[12] These models were estimated for all trait measures and for the two behavioral state measures Agency and Enthusiasm. No CFAs were estimated for Self-Negativity (only two items) and for situation characteristics since the Q-sort nature of the data can yield singular correlation matrices and necessitates negative average interitem correlations (Ozer, 1993), rendering CFA inappropriate.

generalizability of our findings to single-item analyses of behavioral states and situation characteristics (see the Additional Analyses section).

## Statistical Analyses

Data were analyzed using Bayesian multilevel modeling with the R package brms (Bürkner, 2017). Throughout the analyses, we used four chains with 8,000 iterations each (2,000 warmup iterations), yielding 24,000 postwarmup iterations in total (for details, see https://osf.io/c4emf/; Kuper, Gardiner, et al., 2025). To focus on within-country associations, predictors in a given model were country-mean centered (Enders & Tofighi, 2007). Moreover, to facilitate interpretability, centered predictors were then *z*-standardized in the long format (i.e., across persons and countries), the dependent variable was *z*-standardized in the long format, and country-level variables were *z*-standardized on the country level. Throughout all analyses, we examined all possible variable combinations but systematically contrasted theoretically expected and unexpected associations (see the Hypotheses section and Table 1). Given the large number of hypothesis tests, we generally use an α level of .001 for single hypotheses. Nevertheless, we present rates of statistical significance at both $\alpha = .001$ and $\alpha = .05$. Further, when descriptively interpreting general patterns of relations (e.g., whether a given country-level variable is related to the strength of S–B associations across variable combinations), we often use criteria requiring multiple effects to be statistically significant at the $\alpha = .05$ threshold (e.g., at least four interaction effects in the same direction with $p < .05$).[13] Bayesian *p* values were computed as twice the percentage of the posterior on the other side of zero than the parameter estimate (Makowski et al., 2019).

### Main Analyses

For the main analyses, we implemented seven types of models. For the first model, a behavioral state was predicted by a situation characteristic (RQ1a). The fixed effect reflects the average S–B association across countries. Country differences in these associations were modeled as random slopes of situation characteristics across countries and quantified as the random slope standard deviation. To illustrate, the following equation shows the implemented model:

$$y_{ij} = B_{0i} + B_{1i} \cdot x_{ij} + \epsilon_{ij}. \quad (1)$$

In this formula, $y_{ij}$ denotes the behavior of person *j* in country *i*, $B_{0i}$ the (random) intercept of country *i*, and $B_{1i}$ the (random) slope of country *i* for the effect of the situation characteristic $x_{ij}$ on behavior. Moreover, $\epsilon_{ij}$ denotes the residual term. To examine whether the inclusion of country-level differences in S–B associations improved model fit, we compared the widely applicable information criterion (WAIC) weights of the random slope model and a random intercept-only model (the WAIC weight of the random intercept-only model was judged against a threshold of .001). In the next model, we examined cross-level interactions of country-level variables (e.g., collectivism) and situation characteristics in the prediction of a behavioral state (RQ1b). This interaction reflects the extent to which cross-country differences in S–B associations are correlated with the respective country-level variable. The examination of cross-country differences in P–B associations (predictor: trait; dependent variable: behavioral state; RQ2a and RQ2b) and P–S associations (predictor: trait; dependent variable: situation characteristic; RQ3a and RQ3b) was implemented analogously. For the country-level moderation effects, statistical power is arguably most limited here. We include a simulation-based power analysis in additional online Table S33 (https://osf.io/c4emf/files/ukqd7), which indicated high power for what could be considered relatively small regression coefficients, especially at $\alpha = .05$ (which we often used to gauge general patterns of results). Last, we examined P × S interactions in the prediction of a behavioral state, again in models including all possible random slopes (RQ4). The average interaction effect was quantified as the fixed effect of the interaction term. Moreover, we examined the extent of cross-country differences in P × S interactions as the random slope standard deviation of this interaction term and assessed whether modeling these differences improved model fit using WAIC weights.

### Additional Analyses

We conducted several additional analyses to further understand the patterns in the data and to investigate the robustness of our results across different analysis approaches. First, we quantified the correlation between all country-level variables and the average S–B association, P–B association, and P–S association of each country. This analysis was implemented by (a) averaging across all versus expected versus unexpected associations, (b) averaging associations keyed in the direction of the average effect versus absolute associations, and (c) using extracted random slopes[14] versus country-level regression coefficients (from separate linear regressions for each country) versus country-level correlation coefficients. In addition to correlations with country-level variables, correlations among the averages of the three types of associations were also examined.

Second, we examined latent random slope correlations of specific S–B associations and P–B associations in models with one situation characteristic and one personality trait predicting one behavioral state, respectively. This allowed us to examine, for instance, to what extent specific stronger situation characteristic effects on a given behavioral state in some countries were associated with specific weaker personality trait effects on this behavioral state in these countries.

Third, we conducted single-item analyses for behavioral states and situation characteristics. Specifically, models for S–B, P–B, and P–S associations; country differences in these associations; and country-level predictors of these differences (RQ1a, b; RQ2a, b; RQ3a, b) were rerun for combinations of the 23 separate situation characteristic items, the 12 separate behavioral state items, the six personality traits, and the 15 country-level variables. These analyses aid the further nuanced interpretation of the results and simultaneously allow us to ensure that the main findings are not just attributable to some multi-item behavioral state/situation characteristic dimensions not

[13] Note that these criteria represent just one approach to interpret the results (see the Results section), and readers could instead apply more lenient or stringent cutoff criteria themselves. For country-level moderation effects, requiring multiple effects at $\alpha = .05$ rather than at least one effect at $\alpha = .001$ yielded a better representation of general patterns.

[14] For this analysis, random slopes were extracted from models without a random intercept. To implement this, the dependent variable was country-mean centered. This was done given concerns about potentially artificially high associations of extracted random slopes with the mean of the dependent variable (see Kuper et al., 2022).

"working" well across countries due to potential low interitem correlations (see previously).

Fourth, we compared our main results concerning collectivism (based on the responsibilism measure from Talhelm, 2021) with two other measures of collectivism: the classical individualism dimension from Hofstede (reversed; Hofstede et al., 2010) and the novel global collectivism index from Pelham et al. (2022).

Fifth, we present descriptive information including correlations on the person level (within-country) and on the country level, as well as main effects of country-level variables on behavioral states, situation characteristics, and personality traits in random intercept-only multilevel models. Further, we included an analysis of measurement similarity across countries in line with Gardiner et al. (2019), as well as more traditional tests of measurement invariance (see previously).

## Preregistration, Transparency, and Openness

The research questions and hypotheses, as well as the statistical analysis strategy for this project, were preregistered on the Open Science Framework (https://osf.io/gbsdm). At the time of the preregistration, we had already examined the behavioral state data and (separately) the situation characteristic data to guide the analysis choices for this project. Moreover, previous publications using data from the International Situations Project (e.g., Baranski et al., 2021; Funder et al., 2021; Lee et al., 2020; for a full overview, see https://osf.io/yv2nq/) have partly examined variables that are included in our analyses. Importantly, however, the systematic joint analysis of situation characteristics, personality traits, and behavioral states across countries presented here is novel.

The analyses were conducted in line with the preregistration, although some small divergences were necessary. This included the exclusion of data from Uganda given that it was an extreme outlier in the situation characteristic data (see above), the exclusion of the fifth BFI-2 item due to translation issues, and the modification (reversal or replacement by predicted values) of items in specific languages in very rare cases (0.4% of item–language combinations for the BFI-2). Further, some of the additional analyses presented here were not preregistered and should thus be interpreted as exploratory (i.e., measurement similarity/invariance analyses, latent random slope correlations for S–B and P–B associations across countries, single-item analyses, analyses of different collectivism measures). Moreover, criteria for the descriptive interpretation of general patterns across variable combinations or analysis approaches were not preregistered.

The data, R code, output, and additional online materials for this project are openly available at https://osf.io/c4emf. In addition, detailed further information and materials for the International Situations Project are openly available at https://osf.io/yv2nq/.

## Results

Descriptive information, including correlations at different levels and main effects of country-level variables, can be found in additional online Tables S3, S4, and S11, respectively (https://osf.io/c4emf/files/ukqd7). In the following, we describe the results for each research question separately.

### RQ1: Situation Characteristic–Behavioral State (S–B) Associations Across Countries

To examine S–B associations across countries, we predicted one behavioral state (Agency, Enthusiasm, Self-Negativity) by one situation characteristic (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Sociality) each, in separate multilevel models. We examined average S–B associations (fixed effect) and country differences in S–B associations (random slope), which we further present separately for expected and unexpected variable combinations (see Table 1). Following this, we examined the extent to which our 15 included country-level variables moderated S–B associations, in separate multilevel models with cross-level interactions. Finally, and complementarily, correlations between country-level variables and country averages across many S–B associations will be presented.

For average S–B associations as well as variation across countries, see Table 2 and additional online Table S12 (https://osf.io/c4emf/files/ukqd7). All nine hypothesized S–B associations were statistically significant at $\alpha = .001$ in the predicted direction, with an average effect size of $\overline{|B|} = .192$. For instance, Sociality and Enthusiasm were associated with each other ($B = .272$, $p < .001$). The average effect size for unexpected variable combinations was smaller with $\overline{|B|} = .079$.

Next, we examined variation in these associations across countries. Country differences are shown in Figures 2 and 3 for an illustrative example and for averages across all associations, respectively. Standard deviations of S–B random slopes across countries were similar for expected and unexpected variable combinations with $\overline{\sigma} = .060$ and $\overline{\sigma} = .058$, respectively. Fifteen of 21 possible random slopes (71.43%) were associated with fit improvement (WAIC weight of the model excluding the random slope < .001), suggesting the existence of country differences. For a hypothetical average expected S–B association ($\overline{|B|} = .192$, $\overline{\sigma} = .060$, assuming a normal distribution), 80% of true country-specific associations should lie between $B = .115$ and $B = .269$. Overall, we found a high degree of generalization across countries, but also a nonnegligible extent of cross-country variation in S–B associations.

Next, we examined the link between country-level variables and country differences in S–B associations (see Table 3 and additional online Table S15 at https://osf.io/c4emf/files/ukqd7). The average interaction effect was small[15] with $\overline{|B|} = .018$ ($SD = .014$, range from −.057 to .075), and some interaction effects were statistically significant: 22 of 315 (6.98%) at $\alpha = .001$ and 97 of 315 (30.79%) at $\alpha = .05$. Thus, more interaction effects than would be expected by chance were significant, although they were typically small. In the following, we descriptively interpret the overall pattern of results, using the rather liberal (not preregistered) criterion that, for a given country-level variable, at least four interaction effects implying weaker (or stronger) associations should be significant at $\alpha = .05$, with at least three more interaction effects in one direction than in the opposite direction.

We observed the following pattern: S–B associations were often stronger in countries characterized by higher affective autonomy,

[15] Note that here and elsewhere when discussing country-level moderation effects, "small" refers to the magnitude of the regression coefficient. When compared to the (itself relatively small) random slope variation, these interactions can actually reflect moderate or large associations, as indicated by the analysis of correlations between average associations and country-level variables.

**Table 2**
*Situation Characteristic–Behavioral State Associations Across Countries*

| DV: Behavioral state<br>Situation characteristic | Average association: *B* | Country differences: σ |
|---|---|---|
| Agency | | |
| Dut[a] | **0.231 [0.207, 0.254], $p < .001$** | **0.064 [0.042, 0.090], $W < .001$** |
| Int[a] | **0.140 [0.116, 0.164], $p < .001$** | **0.065 [0.044, 0.089], $W < .001$** |
| Adv | 0.036 [0.016, 0.056], $p = .001$ | **0.045 [0.025, 0.069], $W < .001$** |
| Mat | **−0.087 [−0.105, −0.068], $p < .001$** | 0.030 [0.004, 0.055], $W = .140$ |
| pOs | **−0.116 [−0.140, −0.093], $p < .001$** | **0.067 [0.047, 0.092], $W < .001$** |
| Neg | 0.049 [0.020, 0.077], $p = .001$ | **0.086 [0.065, 0.113], $W < .001$** |
| Soc | **−0.162 [−0.190, −0.134], $p < .001$** | **0.085 [0.064, 0.111], $W < .001$** |
| Enthusiasm | | |
| Dut | **−0.063 [−0.094, −0.033], $p < .001$** | **0.097 [0.074, 0.128], $W < .001$** |
| Int | **0.120 [0.093, 0.147], $p < .001$** | **0.080 [0.056, 0.109], $W < .001$** |
| Adv | **−0.133 [−0.156, −0.111], $p < .001$** | **0.056 [0.035, 0.082], $W < .001$** |
| Mat[a] | **0.046 [0.029, 0.064], $p < .001$** | 0.017 [0.001, 0.051], $W = .598$ |
| pOs[a] | **0.207 [0.180, 0.233], $p < .001$** | **0.081 [0.058, 0.108], $W < .001$** |
| Neg[a] | **−0.277 [−0.302, −0.252], $p < .001$** | **0.075 [0.053, 0.102], $W < .001$** |
| Soc[a] | **0.272 [0.240, 0.304], $p < .001$** | **0.104 [0.080, 0.135], $W < .001$** |
| Self-negativity | | |
| Dut | **−0.051 [−0.069, −0.034], $p < .001$** | 0.023 [0.002, 0.047], $W = .329$ |
| Int | −0.017 [−0.039, 0.005], $p = .135$ | **0.053 [0.027, 0.081], $W < .001$** |
| Adv[a] | **0.164 [0.146, 0.182], $p < .001$** | 0.026 [0.001, 0.056], $W = .547$ |
| Mat | 0.016 [0.000, 0.032], $p = .051$ | 0.010 [0.000, 0.034], $W = .720$ |
| pOs[a] | **−0.204 [−0.225, −0.183], $p < .001$** | 0.049 [0.023, 0.073], $W = .003$ |
| Neg[a] | **0.186 [0.163, 0.208], $p < .001$** | **0.058 [0.035, 0.084], $W < .001$** |
| Soc | **−0.094 [−0.117, −0.071], $p < .001$** | **0.060 [0.039, 0.085], $W < .001$** |
| Average | 0.127 (0.081) [−0.277, 0.272] | 0.059 (0.026) [0.010, 0.104] |
| Expected | 0.192 (0.071) [−0.277, 0.272] | 0.060 (0.027) [0.017, 0.104] |
| Unexpected | 0.079 (0.047) [−0.162, 0.120] | 0.058 (0.027) [0.010, 0.097] |

*Note*. Estimates are shown together with 95% credible intervals. Averages are shown in the format mean (standard deviation) [minimum, maximum], with mean and standard deviation based on absolute values. Sample sizes ranged from 15,194 to 15,201 participants ($Mdn$ = 15,197) from 62 countries; see our Open Science Framework project for details at https://osf.io/c4emf. Estimates with $p < .001$ or $W < .001$ are presented in bold. Dut = Duty; Int = Intellect; Adv = Adversity; Mat = Mating; pOs = pOsitivity; Neg = Negativity; Soc = Sociality; DV = dependent variable; $B$ = fixed effect representing the average association; σ = random slope standard deviation representing country differences in the association; $W$ = WAIC weight of the random intercept-only model representing fit improvement when modeling the random slope.
[a] Expected association.

intellectual autonomy, and national socioeconomic status, whereas they were generally weaker in countries characterized by higher embeddedness, hierarchy, collectivism, and independent happiness. For example, the effect of Duty on Agency was stronger in countries characterized by higher intellectual autonomy ($B = .040$, $p < .001$), whereas it was weaker in countries characterized by higher embeddedness ($B = -.046$, $p < .001$). To illustrate, interaction effects are shown for expected associations in combination with collectivism in Figure 4.

These findings are mirrored in our analysis of correlations between country averages in S–B associations and country-level variables (see additional online Table S24 at https://osf.io/c4emf/files/ukqd7). Here, we focus on dimensions that showed associations statistically significant at the more liberal $\alpha = .05$ level across at least half of the different analysis approaches.[16] Average S–B associations tended to be stronger in countries characterized by higher affective autonomy, intellectual autonomy, and national socioeconomic status, whereas they tended to be weaker in countries characterized by higher embeddedness, collectivism, and independent happiness. For example, the average S–B association[17] correlated at $r = -.403$, $p = .002$, with collectivism and at $r = .469$, $p < .001$, with the national socioeconomic status. Overall, the pattern of results contradicts our hypotheses concerning moderation by country-level variables (opposite direction: embeddedness, collectivism, and to some extent hierarchy; few or inconsistent effects: cultural tightness, self-construal).

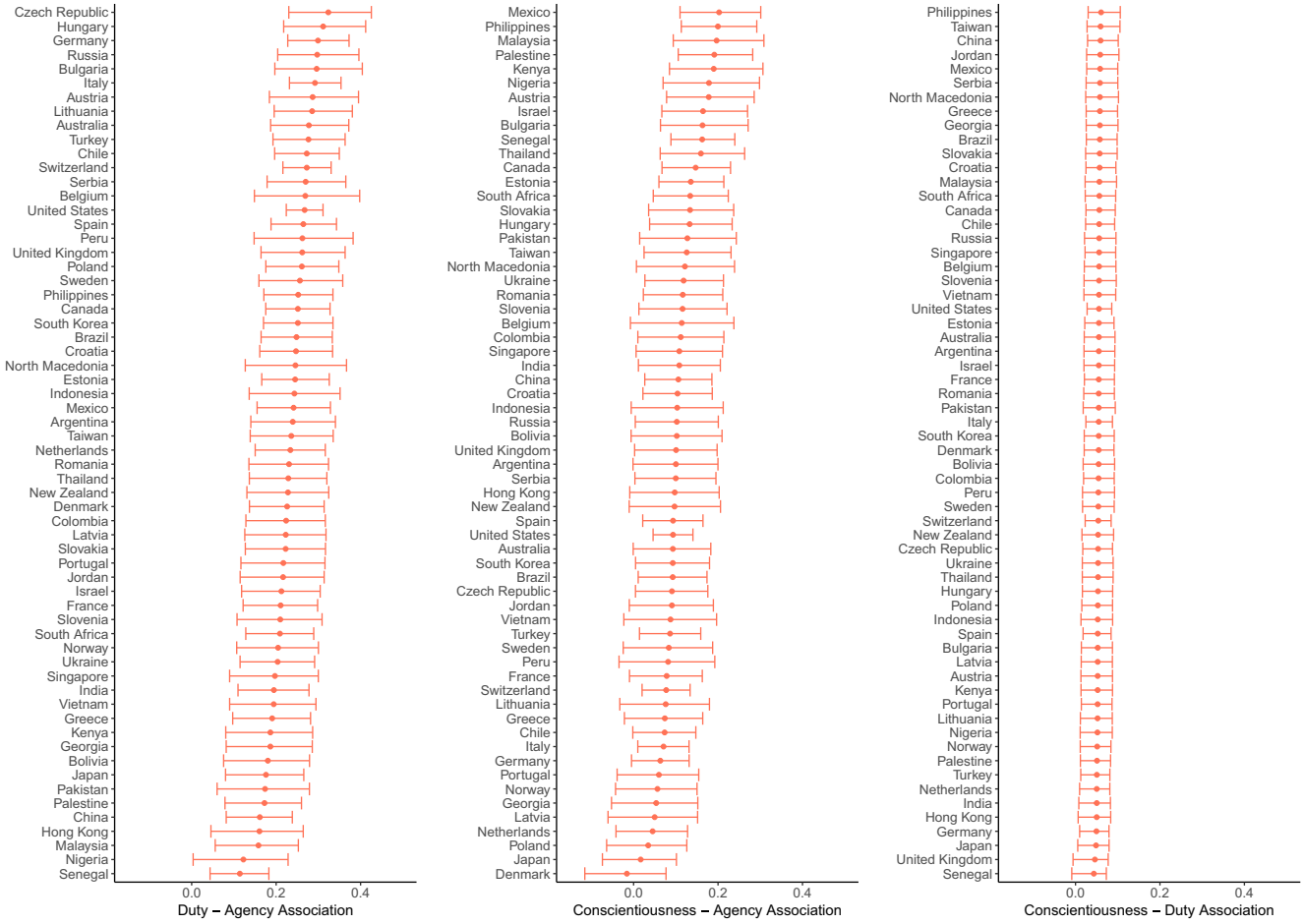
## RQ2: Personality Trait–Behavioral State (P–B) Associations Across Countries

To examine P–B associations across countries, we predicted one behavioral state (Agency, Enthusiasm, Self-Negativity) by one trait (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness, Honesty-Humility) each, in separate multilevel models. We examined average P–B associations (fixed effect) and country differences in P–B associations (random slope). Following this, we examined the extent to which our 15 included country-level variables moderated specific P–B associations, in separate multilevel

[16] Combinations of (a) all versus expected versus unexpected associations, (b) associations keyed in the direction of the average effect versus absolute associations, and (c) extracted random slopes versus country-level regression coefficients versus country-level correlations. Note that results were relatively similar when requiring at least one association statistically significant at $\alpha = .001$ instead.
[17] Keyed in the direction of the average effect and based on separate linear regressions for each country.

**Figure 2**

*Illustrative Examples for Country Differences in Situation Characteristic–Behavioral State, Personality Trait–Behavioral State, and Personality Trait–Situation Characteristic Associations*




*Note*. Country-specific estimates for associations are based on extracted random slopes and shown together with 95% credible intervals, sorted by size. See the online article for the color version of this figure.

models. Finally, correlations between country-level variables and country averages across P–B associations will be presented.

For average P–B associations as well as variation across countries, see Table 4 and additional online Table S13 (https://osf.io/c4emf/files/ukqd7). All six hypothesized P–B associations were statistically significant at $\alpha = .001$ in the predicted direction, with an average effect size of $\overline{|B|} = .142$. For instance, Extraversion and Agency were associated with each other ($B = .175$, $p < .001$). The average effect size for unexpected variable combinations was smaller with $\overline{|B|} = .078$.

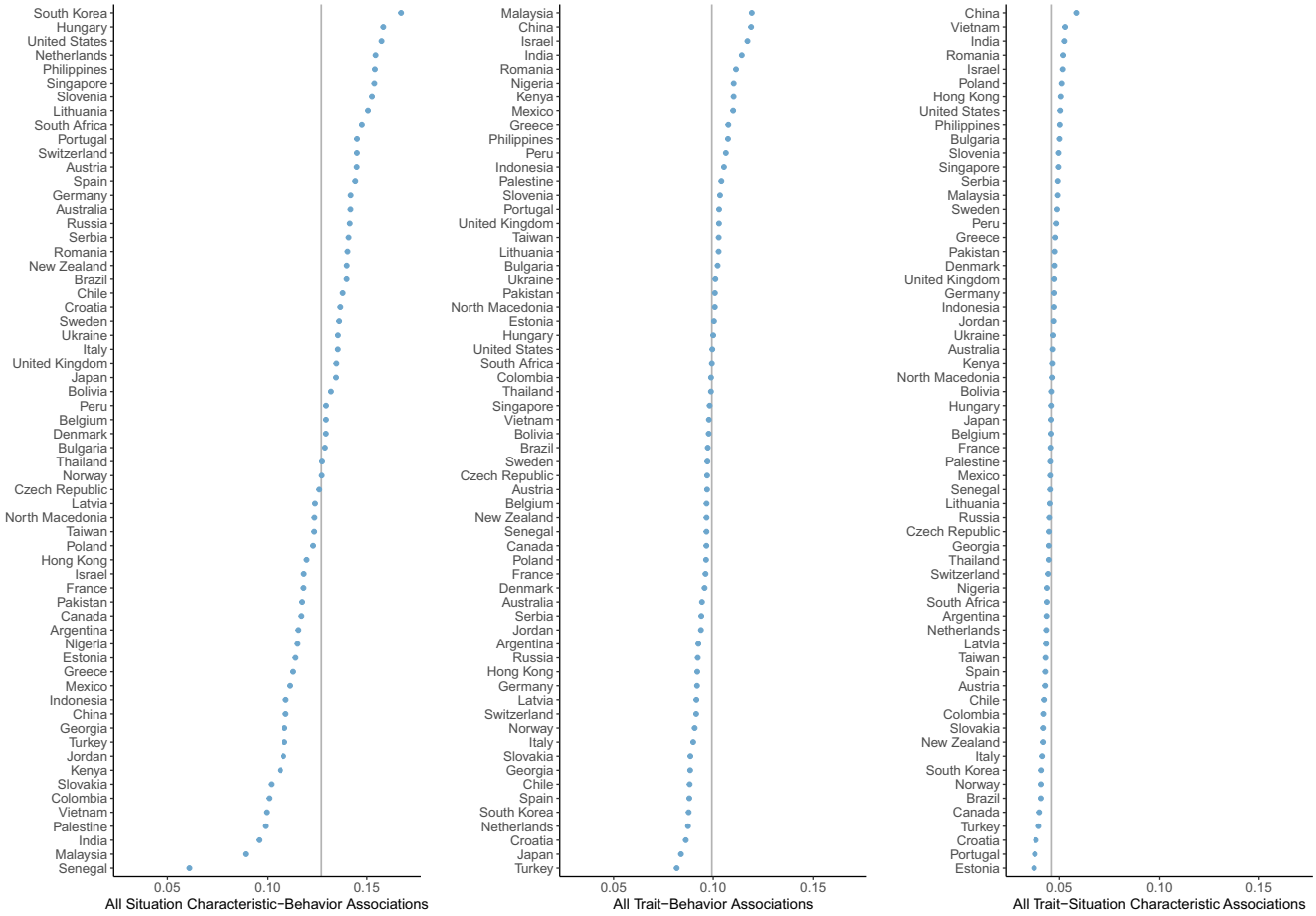
Regarding country differences in P–B associations, random slope standard deviations were relatively similar for expected and unexpected variable combinations with $\overline{\sigma} = .049$ and $\overline{\sigma} = .045$, respectively. Country differences are shown in Figures 2 and 3. Overall, eight of 18 possible random slopes (44.44%) were associated with fit improvement. For a hypothetical average expected P–B association ($\overline{|B|} = .142$, $\overline{\sigma} = .049$, assuming a normal distribution), 80% of true country-specific associations should lie between $B = .079$ and $B = .205$. Again, there is thus a high degree of generalization across countries, but also some nonnegligible cross-country variation.

Interestingly, there were several statistically significant random intercept–random slope correlations (see additional online Table S13 at https://osf.io/c4emf/files/ukqd7). Effects of Extraversion, Agreeableness, and Conscientiousness on Agency were more positive (or less negative) in countries characterized by higher average Agency, whereas effects of Neuroticism were more negative in countries with higher average Agency (absolute *r*s from .740 to .916, *p*s < .001).

Interactions between country-level variables and personality traits in the prediction of behavioral states can be found in Table 5 and additional online Table S16 (https://osf.io/c4emf/files/ukqd7). The average interaction effect was small with $\overline{|B|} = .014$ ($SD = .010$, range from −.048 to .046), and some interactions were statistically significant: 12 of 270 (4.44%) at $\alpha = .001$ and 70 of 270 (25.93%) at $\alpha = .05$. Thus, the rate of statistical significance exceeded chance level, but effect sizes were small.

**Figure 3**

*Country Differences in Average Situation Characteristic–Behavioral State, Personality Trait–Behavioral State, and Personality Trait–Situation Characteristic Associations*




*Note*. Country-specific estimates (sorted by size) are based on averages across extracted random slopes keyed in the direction of the average association. Gray lines indicate the respective average association across countries. See the online article for the color version of this figure.

We observed the following pattern[18]: P–B associations were generally stronger in countries characterized by higher embeddedness, hierarchy, independent happiness, and interdependent happiness. In turn, P–B associations tended to be weaker in countries characterized by higher intellectual autonomy, egalitarianism, and national socioeconomic status. For example, the effect of trait Conscientiousness on Agency was stronger in countries characterized by higher embeddedness ($B = .044$, $p < .001$), but weaker in countries with a higher national socioeconomic status ($B = -.048$, $p < .001$). To illustrate, interactions of expected associations with embeddedness are shown in Figure 5.

These findings are similar to findings based on correlations between country averages in P–B associations and country-level variables (see additional online Table S25 at https://osf.io/c4emf/files/ukqd7).[19] Average P–B associations tended to be stronger in countries characterized by higher embeddedness, mastery, independent happiness, and interdependent happiness, whereas they were weaker in countries characterized by higher intellectual autonomy and a higher national socioeconomic status. For example, the average P–B association[20] correlated at $r = -.380$, $p = .003$, with the national socioeconomic status and at $r = .392$, $p = .002$, with embeddedness. Overall, the pattern of results again contradicts our hypotheses about moderation by country-level variables (opposite direction: embeddedness and to some extent hierarchy; few or inconsistent effects: collectivism, cultural tightness, self-construal).

## RQ3: Personality Trait–Situation Characteristic (P–S) Associations Across Countries

To examine P–S associations across countries, we predicted one situation characteristic (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Sociality) by one trait (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness,

[18] Again, we descriptively interpret the general pattern of results using a rather liberal criterion (at least four effects implying weaker [or stronger] associations at $\alpha = .05$; at least three more in one direction than in the opposite direction).

[19] We again focus on dimensions showing associations significant at $\alpha = .05$ across at least half of all analysis approaches (results were relatively similar when requiring at least one association significant at $\alpha = .001$).

[20] Keyed in the direction of the average effect and based on separate linear regressions for each country.

**Table 3**

*Country-Level Moderators of Situation Characteristic–Behavioral State Associations*

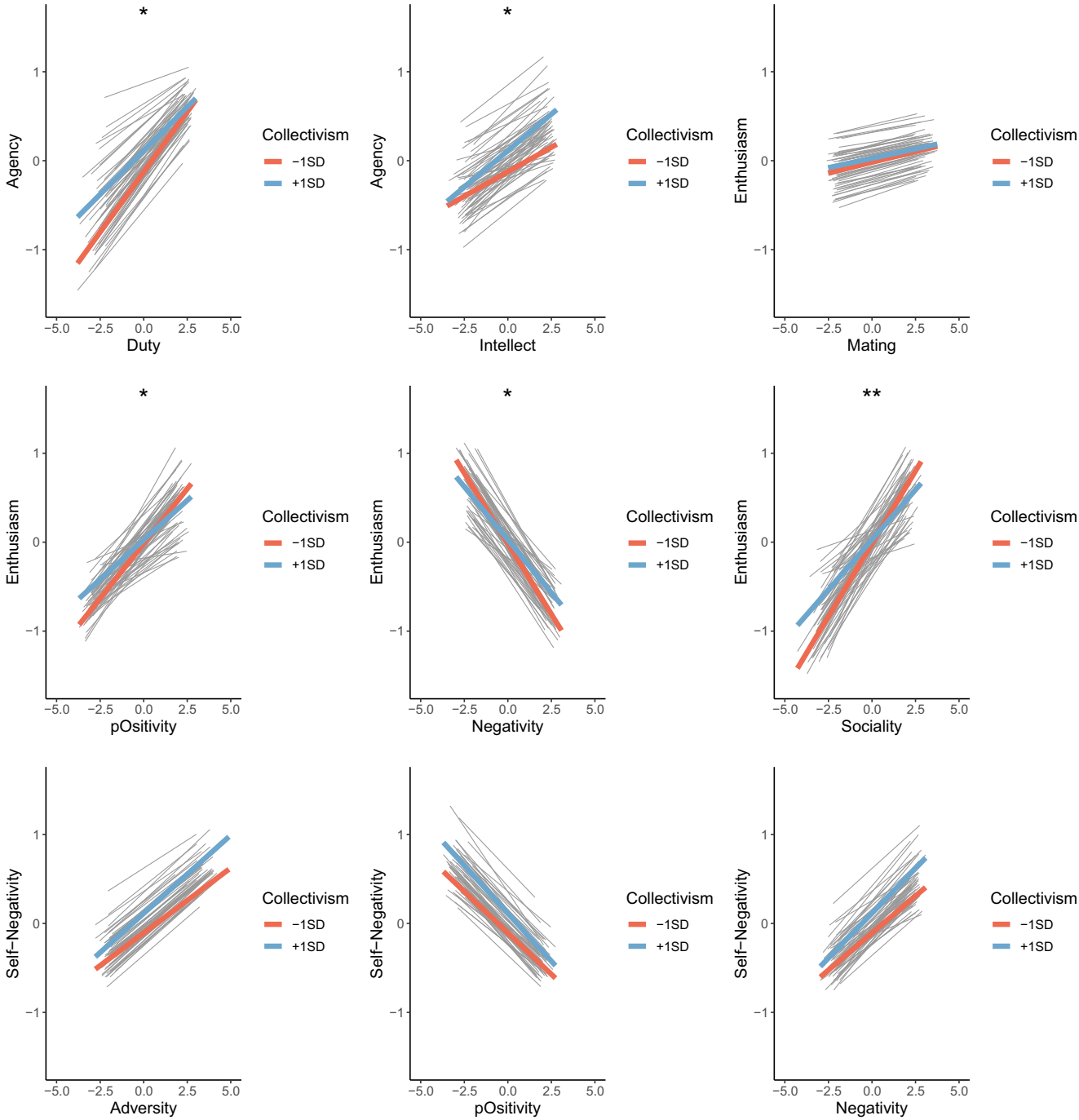
| DV: Beh. Sit.Char | Harmony | Embeddedness | Hierarchy | Mastery | Affective autonomy | Intellectual autonomy | Egalitarianism | Collectivism | Tightness | SC: Self-expression | SC: Self-interest | SC: Consistency | Independent happiness | Interdependent happiness | nSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Agency** | | | | | | | | | | | | | | | |
| Dut[a] | 0.032, $p = .003$ | **−0.046, $p < .001$** | −0.029, $p = .011$ | −0.015, $p = .198$ | 0.036, $p = .001$ | **0.040, $p < .001$** | 0.013, $p = .286$ | −0.037, $p = .001$ | −0.028, $p = .018$ | 0.028, $p = .019$ | 0.010, $p = .435$ | −0.006, $p = .618$ | −0.024, $p = .047$ | −0.022, $p = .055$ | **0.049, $p < .001$** |
| Int[a] | −0.033, $p = .004$ | 0.020, $p = .094$ | 0.034, $p = .005$ | 0.018, $p = .124$ | −0.017, $p = .157$ | −0.031, $p = .007$ | −0.027, $p = .022$ | 0.027, $p = .031$ | 0.016, $p = .170$ | −0.019, $p = .114$ | 0.013, $p = .317$ | −0.005, $p = .658$ | 0.007, $p = .574$ | −0.001, $p = .957$ | −0.021, $p = .079$ |
| Adv | 0.016, $p = .081$ | −0.029, $p = .002$ | −0.025, $p = .011$ | −0.007, $p = .497$ | **0.032, $p < .001$** | 0.022, $p = .019$ | 0.006, $p = .522$ | **−0.035, $p < .001$** | −0.004, $p = .673$ | −0.003, $p = .756$ | −0.002, $p = .871$ | −0.017, $p = .097$ | −0.023, $p = .025$ | −0.017, $p = .070$ | **0.039, $p < .001$** |
| Mat | −0.015, $p = .059$ | 0.029, $p = .001$ | 0.023, $p = .011$ | 0.013, $p = .150$ | −0.018, $p = .035$ | **−0.031, $p < .001$** | −0.019, $p = .037$ | 0.023, $p = .014$ | 0.003, $p = .770$ | −0.008, $p = .424$ | −0.003, $p = .754$ | 0.002, $p = .797$ | 0.018, $p = .054$ | 0.024, $p = .004$ | **−0.029, $p < .001$** |
| pOs | −0.008, $p = .467$ | 0.030, $p = .013$ | 0.019, $p = .111$ | −0.003, $p = .827$ | −0.033, $p = .005$ | −0.018, $p = .132$ | −0.008, $p = .493$ | 0.029, $p = .017$ | 0.000, $p = .981$ | −0.001, $p = .948$ | −0.005, $p = .690$ | 0.001, $p = .922$ | 0.018, $p = .157$ | 0.006, $p = .637$ | **−0.043, $p < .001$** |
| Neg | 0.017, $p = .208$ | **−0.050, $p < .001$** | −0.033, $p = .015$ | −0.007, $p = .596$ | 0.039, $p = .004$ | 0.035, $p = .012$ | 0.026, $p = .065$ | −0.040, $p = .004$ | 0.020, $p = .141$ | −0.018, $p = .220$ | 0.004, $p = .787$ | −0.021, $p = .146$ | −0.040, $p = .005$ | −0.017, $p = .226$ | **0.063, $p < .001$** |
| Soc | −0.037, $p = .006$ | **0.052, $p < .001$** | 0.040, $p = .004$ | 0.023, $p = .096$ | −0.029, $p = .035$ | **−0.046, $p < .001$** | **−0.046, $p < .001$** | 0.040, $p = .004$ | 0.000, $p = .975$ | −0.022, $p = .120$ | 0.006, $p = .689$ | −0.011, $p = .448$ | 0.017, $p = .230$ | 0.016, $p = .236$ | **−0.044, $p < .001$** |
| **Enthusiasm** | | | | | | | | | | | | | | | |
| Dut | 0.009, $p = .562$ | 0.018, $p = .259$ | 0.015, $p = .342$ | −0.007, $p = .672$ | −0.031, $p = .048$ | −0.016, $p = .316$ | 0.011, $p = .488$ | 0.028, $p = .081$ | −0.016, $p = .308$ | 0.001, $p = .964$ | −0.018, $p = .253$ | 0.013, $p = .388$ | 0.015, $p = .359$ | 0.002, $p = .894$ | −0.035, $p = .025$ |
| Int | **0.049, $p < .001$** | −0.028, $p = .045$ | −0.036, $p = .006$ | −0.022, $p = .107$ | 0.023, $p = .088$ | 0.037, $p = .007$ | 0.018, $p = .182$ | −0.042, $p = .003$ | −0.040, $p = .002$ | **0.051, $p < .001$** | 0.015, $p = .286$ | 0.009, $p = .524$ | −0.008, $p = .577$ | −0.028, $p = .035$ | 0.025, $p = .058$ |
| Adv | −0.009, $p = .397$ | 0.026, $p = .021$ | 0.021, $p = .066$ | 0.000, $p = .984$ | −0.022, $p = .045$ | −0.026, $p = .020$ | −0.011, $p = .336$ | 0.032, $p = .004$ | 0.007, $p = .554$ | −0.015, $p = .190$ | −0.014, $p = .220$ | 0.000, $p = .994$ | 0.013, $p = .268$ | 0.008, $p = .439$ | −0.028, $p = .010$ |
| Mat[a] | 0.006, $p = .448$ | 0.003, $p = .751$ | −0.010, $p = .249$ | 0.002, $p = .815$ | −0.002, $p = .818$ | 0.000, $p = .990$ | −0.011, $p = .230$ | −0.003, $p = .763$ | −0.014, $p = .118$ | 0.023, $p = .011$ | 0.003, $p = .794$ | 0.013, $p = .152$ | 0.004, $p = .656$ | 0.003, $p = .705$ | 0.005, $p = .574$ |
| pOs[a] | 0.007, $p = .637$ | −0.037, $p = .010$ | −0.009, $p = .539$ | 0.008, $p = .574$ | 0.036, $p = .007$ | 0.020, $p = .158$ | 0.013, $p = .350$ | −0.034, $p = .016$ | 0.020, $p = .141$ | −0.019, $p = .162$ | 0.004, $p = .744$ | −0.030, $p = .026$ | −0.037, $p = .006$ | −0.004, $p = .746$ | 0.040, $p = .002$ |
| Neg[a] | −0.014, $p = .269$ | 0.033, $p = .012$ | 0.016, $p = .225$ | 0.001, $p = .952$ | −0.040, $p = .002$ | −0.022, $p = .083$ | −0.005, $p = .686$ | 0.039, $p = .004$ | 0.002, $p = .883$ | −0.004, $p = .772$ | −0.003, $p = .806$ | 0.017, $p = .216$ | 0.028, $p = .030$ | 0.010, $p = .459$ | −0.039, $p = .001$ |
| Soc[a] | 0.025, $p = .098$ | **−0.057, $p < .001$** | −0.028, $p = .078$ | −0.001, $p = .938$ | **0.050, $p < .001$** | 0.047, $p = .002$ | 0.011, $p = .469$ | **−0.051, $p < .001$** | −0.003, $p = .841$ | −0.001, $p = .956$ | 0.024, $p = .142$ | −0.033, $p = .039$ | −0.048, $p = .002$ | −0.018, $p = .245$ | **0.075, $p < .001$** |
| **Self-negativity** | | | | | | | | | | | | | | | |
| Dut | 0.000, $p = .979$ | −0.008, $p = .395$ | 0.001, $p = .897$ | −0.006, $p = .507$ | 0.013, $p = .116$ | 0.006, $p = .481$ | 0.001, $p = .909$ | −0.005, $p = .583$ | 0.005, $p = .603$ | 0.002, $p = .858$ | −0.011, $p = .242$ | 0.007, $p = .460$ | −0.022, $p = .020$ | −0.012, $p = .150$ | 0.010, $p = .248$ |
| Int | 0.015, $p = .137$ | −0.028, $p = .010$ | −0.024, $p = .024$ | −0.004, $p = .714$ | 0.020, $p = .057$ | 0.022, $p = .036$ | 0.007, $p = .514$ | −0.019, $p = .092$ | −0.004, $p = .705$ | 0.011, $p = .320$ | 0.015, $p = .199$ | 0.000, $p = .966$ | −0.028, $p = .016$ | 0.002, $p = .867$ | **0.037, $p < .001$** |
| Adv[a] | −0.007, $p = .391$ | 0.012, $p = .217$ | 0.022, $p = .020$ | 0.006, $p = .433$ | −0.008, $p = .409$ | −0.012, $p = .191$ | −0.014, $p = .126$ | 0.015, $p = .126$ | 0.015, $p = .110$ | −0.004, $p = .648$ | 0.011, $p = .274$ | −0.001, $p = .937$ | −0.002, $p = .807$ | −0.012, $p = .163$ | −0.014, $p = .139$ |
| Mat | −0.003, $p = .644$ | 0.011, $p = .186$ | 0.007, $p = .415$ | 0.006, $p = .491$ | −0.008, $p = .355$ | −0.007, $p = .421$ | −0.005, $p = .573$ | 0.003, $p = .738$ | 0.001, $p = .893$ | 0.010, $p = .242$ | 0.004, $p = .689$ | 0.012, $p = .163$ | 0.009, $p = .335$ | 0.008, $p = .326$ | −0.006, $p = .493$ |
| pOs[a] | 0.019, $p = .059$ | −0.014, $p = .228$ | −0.020, $p = .072$ | 0.001, $p = .960$ | 0.010, $p = .370$ | 0.024, $p = .027$ | 0.023, $p = .025$ | −0.014, $p = .214$ | −0.004, $p = .683$ | 0.009, $p = .424$ | −0.007, $p = .533$ | 0.013, $p = .230$ | −0.002, $p = .829$ | 0.009, $p = .371$ | 0.003, $p = .782$ |
| Neg[a] | −0.025, $p = .024$ | 0.007, $p = .568$ | 0.020, $p = .093$ | 0.013, $p = .247$ | −0.007, $p = .571$ | −0.016, $p = .169$ | −0.021, $p = .070$ | 0.018, $p = .138$ | 0.013, $p = .261$ | −0.020, $p = .085$ | 0.006, $p = .635$ | −0.016, $p = .173$ | −0.002, $p = .891$ | −0.007, $p = .544$ | −0.003, $p = .821$ |
| Soc | 0.011, $p = .329$ | −0.022, $p = .054$ | −0.017, $p = .153$ | 0.006, $p = .609$ | 0.028, $p = .012$ | 0.025, $p = .029$ | −0.006, $p = .626$ | −0.033, $p = .005$ | −0.016, $p = .163$ | 0.006, $p = .615$ | 0.011, $p = .387$ | −0.009, $p = .467$ | 0.016, $p = .200$ | 0.022, $p = .053$ | 0.031, $p = .010$ |

*Note.* Shown are regression coefficients for interaction effects with country-level moderators. Cells are colored if an interaction with $p < .05$ indicated a stronger (orange) or weaker (blue) association (in the direction of the average effect, only for average effects with $p < .05$) for countries high on this variable, respectively. Sample sizes ranged from 14,136 to 15,201 participants (*Mdn* = 14,461) from 55 to 62 countries (*Mdn* = 58); see our Open Science Framework project for details at https://osf.io/c4emf. Estimates with $p < .001$ are presented in bold. Sit.Char = situation characteristic; Beh. = behavioral state; Dut = Duty; Int = Intellect; Adv = Adversity; Mat = Mating; pOs = pOsitivity; Neg = Negativity; Soc = Sociality; SC = self-construal; nSES = national socioeconomic status operationalized using the Human Development Index; DV = dependent variable. See the online article for the color version of this table.

[a] Expected association.

**Figure 4**

*Illustrative Moderation Effects by Country-Level Variables: Situation Characteristic–Behavioral State Associations*




*Note*. Shown are illustrative moderation effects by collectivism for all expected situation characteristic–behavioral state associations. Individual gray lines represent predicted values for specific countries. For visualizations of all interaction effects, see additional online Figure S1 (https://osf.io/c4emf). See the online article for the color version of this figure.

$^{*}p < .05$. $^{**}p < .001$.

Honesty-Humility) each, in separate multilevel models. We examined average P–S associations (fixed effect) and country differences in P–S associations (random slope). Following this, we examined the extent to which our 15 included country-level variables moderated specific P–S associations, in separate multilevel models. Finally, correlations between country-level variables and country averages across P–S associations will be presented.

**Table 4**
*Personality Trait–Behavioral State Associations Across Countries*

| DV: Behavioral state<br>Personality trait | Average association: $B$ | Country differences: $\sigma$ |
|---|---|---|
| Agency | | |
| Trait E[a] | **0.175 [0.154, 0.197], $p < .001$** | **0.051 [0.031, 0.075], $W < .001$** |
| Trait A | −0.037 [−0.059, −0.014], $p = .002$ | **0.058 [0.035, 0.085], $W < .001$** |
| Trait C[a] | **0.111 [0.087, 0.135], $p < .001$** | **0.070 [0.049, 0.096], $W < .001$** |
| Trait N | **−0.083 [−0.107, −0.060], $p < .001$** | **0.063 [0.041, 0.090], $W < .001$** |
| Trait O | **0.105 [0.083, 0.129], $p < .001$** | **0.060 [0.038, 0.086], $W < .001$** |
| Trait H[a] | **−0.082 [−0.101, −0.064], $p < .001$** | 0.036 [0.014, 0.058], $W = .018$ |
| Enthusiasm | | |
| Trait E[a] | **0.167 [0.151, 0.184], $p < .001$** | 0.015 [0.001, 0.041], $W = .622$ |
| Trait A[a] | **0.046 [0.022, 0.071], $p < .001$** | **0.066 [0.043, 0.094], $W < .001$** |
| Trait C | −0.006 [−0.027, 0.014], $p = .550$ | 0.046 [0.018, 0.074], $W = .005$ |
| Trait N | **−0.037 [−0.055, −0.018], $p < .001$** | 0.031 [0.002, 0.062], $W = .460$ |
| Trait O | **0.088 [0.071, 0.105], $p < .001$** | 0.014 [0.001, 0.040], $W = .703$ |
| Trait H | −0.026 [−0.044, −0.008], $p = .005$ | 0.027 [0.004, 0.053], $W = .272$ |
| Self-negativity | | |
| Trait E | **−0.124 [−0.145, −0.103], $p < .001$** | 0.050 [0.023, 0.077], $W = .003$ |
| Trait A | **−0.140 [−0.161, −0.118], $p < .001$** | **0.052 [0.024, 0.080], $W < .001$** |
| Trait C | **−0.149 [−0.170, −0.130], $p < .001$** | 0.042 [0.011, 0.069], $W = .026$ |
| Trait N[a] | **0.271 [0.249, 0.293], $p < .001$** | **0.056 [0.031, 0.082], $W < .001$** |
| Trait O | **−0.040 [−0.062, −0.019], $p < .001$** | 0.049 [0.023, 0.076], $W = .002$ |
| Trait H | **−0.098 [−0.119, −0.077], $p < .001$** | 0.047 [0.010, 0.076], $W = .033$ |
| Average | 0.099 (0.066) [−0.149, 0.271] | 0.046 (0.016) [0.014, 0.070] |
| Expected | 0.142 (0.080) [−0.082, 0.271] | 0.049 (0.021) [0.015, 0.070] |
| Unexpected | 0.078 (0.048) [−0.149, 0.105] | 0.045 (0.015) [0.014, 0.063] |

*Note.* Estimates are shown together with 95% credible intervals. Averages are shown in the format mean (standard deviation) [minimum, maximum], with mean and standard deviation based on absolute values. Results are based on $N = 15{,}221$ participants from 62 countries. Estimates with $p < .001$ or $W < .001$ are presented in bold. Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility; DV = dependent variable; $B$ = fixed effect representing the average association; $\sigma$ = random slope standard deviation representing country differences in the association; $W$ = WAIC weight of the random intercept-only model representing fit improvement when modeling the random slope.
[a] Expected association.



For average P–S associations as well as variation across countries, see Table 6 and additional online Table S14 (https://osf.io/c4emf/files/ukqd7). All 12 hypothesized P–S associations were statistically significant at $\alpha = .001$ in the predicted direction, but their average effect size was substantially smaller than for the other two types of associations with $\overline{|B|} = .080$. For instance, Agreeableness and Sociality were associated with each other ($B = .095$, $p < .001$). Average unexpected effects were again smaller with $\overline{|B|} = .033$.

Variation in P–S associations across countries tended to be quite small ($\overline{\sigma} = .024$ for both expected and unexpected variable combinations) and was rarely associated with fit improvement (only one of 42 cases). Country differences are shown in Figures 2 and 3. Overall, there is little evidence for country differences in P–S associations in the present data.

We nevertheless proceed with the examination of interaction effects involving country-level variables since statistical power for specific interaction effects can be larger than for random slope standard deviations (depending on the effect sizes involved). This analysis of interaction effects between traits and country-level variables in the prediction of situation characteristics similarly revealed fewer statistically significant effects than for the other two types of associations ($\alpha = .001$: five of 630 [0.79%]; $\alpha = .05$: 86 of 630 [13.65%]), and effect sizes were quite small on average with $\overline{|B|} = .010$. Interactions between country-level variables and personality traits in the prediction of situation characteristics can be found in Table 7 and additional online Table S17 (https://osf.io/c4emf/files/ukqd7). Given the smaller number of statistically significant interactions and the higher number of variable combinations, the following description of the overall pattern of results needs to be interpreted with caution. At least in some cases, P–S associations tended to be stronger in countries characterized by higher embeddedness, hierarchy, collectivism, independent happiness, and interdependent happiness. In turn, effects were at least in some cases weaker in countries characterized by higher harmony, intellectual autonomy, egalitarianism, self-expression, and national socioeconomic status. To illustrate, interaction effects of expected associations with hierarchy are shown in Figure 6.

We found fewer links when examining correlations between country averages in P–S associations and country-level variables (see additional online Table S26 at https://osf.io/c4emf/files/ukqd7). In particular, we observed links with harmony and egalitarianism

**Table 5**

*Country-Level Moderators of Personality Trait–Behavioral State Associations*

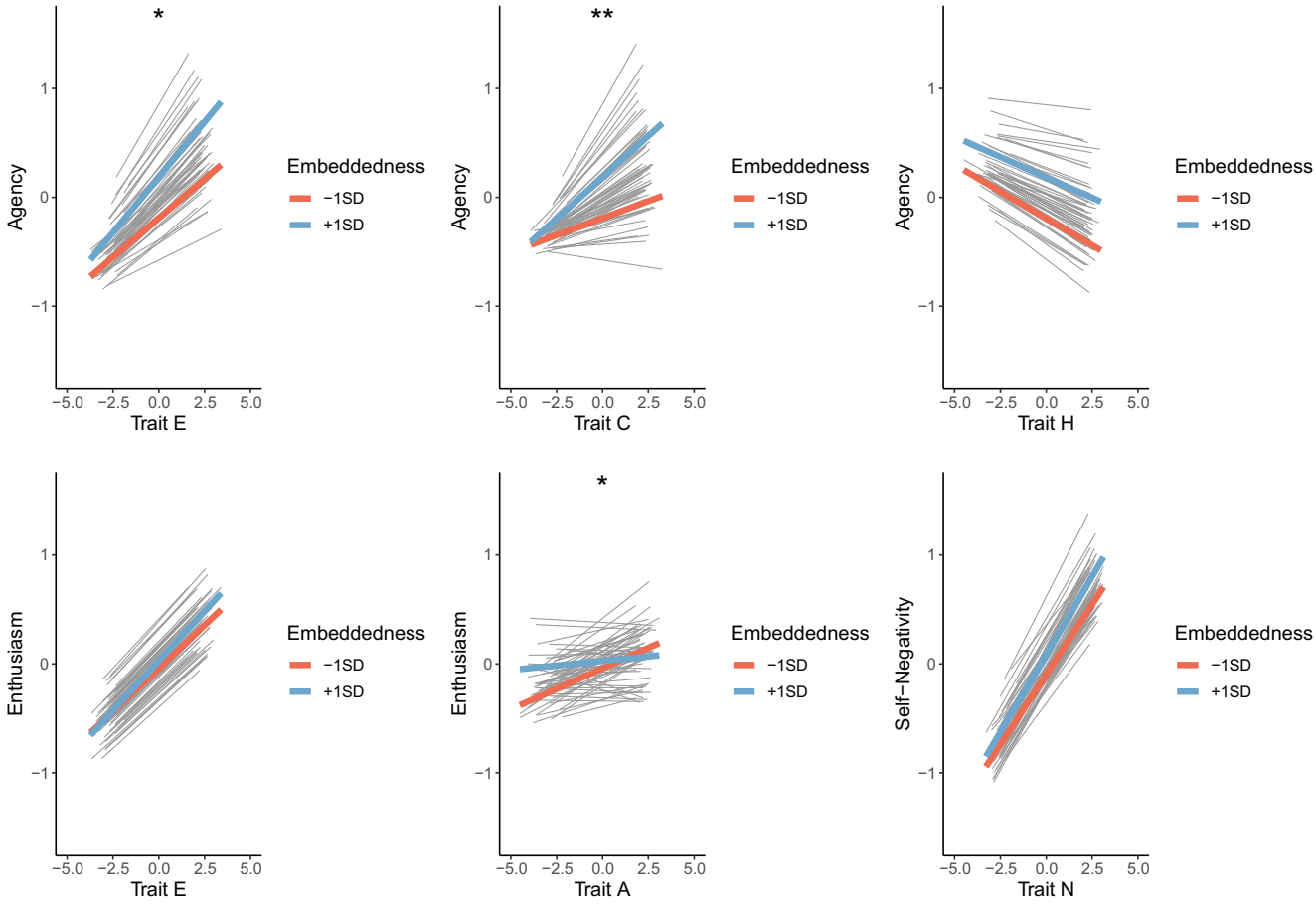
| DV: Beh. Trait | Harmony | Embeddedness | Hierarchy | Mastery | Affective autonomy | Intellectual autonomy | Egalitarianism | Collectivism | Tightness | SC: Self-expression | SC: Self-interest | SC: Consistency | Independent happiness | Interdependent happiness | nSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Agency | | | | | | | | | | | | | | | |
| Trait E[a] | −0.010, $p = .360$ | 0.030, $p = .006$ | 0.009, $p = .424$ | 0.003, $p = .781$ | −0.022, $p = .046$ | −0.022, $p = .037$ | −0.026, $p = .014$ | 0.020, $p = .083$ | −0.011, $p = .290$ | −0.009, $p = .397$ | 0.006, $p = .568$ | −0.010, $p = .356$ | 0.018, $p = .108$ | 0.013, $p = .195$ | −0.029, $p = .009$ |
| Trait A | −0.017, $p = .054$ | **0.032, $p < .001$** | 0.021, $p = .036$ | 0.004, $p = .678$ | −0.024, $p = .014$ | −0.025, $p = .010$ | −0.025, $p = .010$ | 0.031, $p = .003$ | 0.001, $p = .930$ | −0.021, $p = .058$ | −0.004, $p = .752$ | −0.005, $p = .683$ | 0.012, $p = .302$ | 0.004, $p = .701$ | **−0.043, $p < .001$** |
| Trait C[a] | −0.019, $p = .094$ | **0.044, $p < .001$** | 0.021, $p = .072$ | −0.005, $p = .683$ | **−0.040, $p < .001$** | −0.036, $p = .002$ | −0.025, $p = .032$ | **0.045, $p < .001$** | −0.004, $p = .761$ | −0.021, $p = .095$ | −0.004, $p = .763$ | 0.002, $p = .855$ | 0.038, $p = .002$ | 0.026, $p = .028$ | **−0.048, $p < .001$** |
| Trait N | 0.005, $p = .642$ | −0.031, $p = .007$ | −0.007, $p = .571$ | 0.007, $p = .567$ | 0.032, $p = .004$ | 0.021, $p = .063$ | 0.008, $p = .478$ | −0.022, $p = .071$ | 0.010, $p = .386$ | −0.003, $p = .811$ | 0.010, $p = .398$ | −0.012, $p = .340$ | −0.022, $p = .072$ | −0.009, $p = .441$ | **0.046, $p < .001$** |
| Trait O | −0.023, $p = .033$ | 0.028, $p = .016$ | 0.023, $p = .041$ | 0.018, $p = .106$ | −0.019, $p = .089$ | −0.026, $p = .024$ | −0.025, $p = .028$ | 0.035, $p = .003$ | 0.019, $p = .099$ | −0.028, $p = .013$ | 0.012, $p = .317$ | −0.017, $p = .165$ | 0.012, $p = .343$ | −0.004, $p = .762$ | **−0.040, $p < .001$** |
| Trait H[a] | −0.025, $p = .002$ | 0.012, $p = .206$ | 0.019, $p = .032$ | 0.016, $p = .068$ | −0.007, $p = .457$ | −0.014, $p = .133$ | −0.012, $p = .184$ | 0.013, $p = .188$ | −0.004, $p = .646$ | −0.016, $p = .114$ | −0.009, $p = .350$ | 0.000, $p = .967$ | 0.014, $p = .167$ | 0.014, $p = .129$ | −0.023, $p = .012$ |
| Enthusiasm | | | | | | | | | | | | | | | |
| Trait E[a] | −0.017, $p = .028$ | 0.012, $p = .184$ | 0.020, $p = .024$ | 0.016, $p = .067$ | −0.002, $p = .798$ | −0.014, $p = .100$ | −0.021, $p = .016$ | 0.011, $p = .233$ | 0.010, $p = .249$ | −0.015, $p = .092$ | 0.010, $p = .249$ | −0.014, $p = .135$ | −0.002, $p = .844$ | 0.010, $p = .245$ | 0.005, $p = .571$ |
| Trait A[a] | 0.005, $p = .682$ | −0.029, $p = .016$ | 0.000, $p = .988$ | −0.003, $p = .791$ | 0.021, $p = .088$ | 0.023, $p = .068$ | 0.005, $p = .722$ | −0.017, $p = .202$ | 0.012, $p = .336$ | −0.009, $p = .498$ | −0.002, $p = .907$ | −0.010, $p = .408$ | −0.002, $p = .900$ | 0.003, $p = .786$ | 0.028, $p = .025$ |
| Trait C | −0.010, $p = .346$ | 0.010, $p = .353$ | 0.025, $p = .021$ | 0.000, $p = .995$ | −0.006, $p = .561$ | −0.015, $p = .144$ | −0.006, $p = .602$ | 0.018, $p = .112$ | 0.027, $p = .007$ | −0.026, $p = .017$ | −0.004, $p = .710$ | −0.015, $p = .163$ | 0.009, $p = .433$ | 0.009, $p = .379$ | −0.005, $p = .626$ |
| Trait N | 0.011, $p = .210$ | 0.003, $p = .769$ | −0.021, $p = .033$ | −0.010, $p = .302$ | −0.010, $p = .281$ | 0.000, $p = .996$ | 0.014, $p = .141$ | −0.001, $p = .928$ | −0.017, $p = .071$ | 0.018, $p = .064$ | −0.004, $p = .709$ | 0.006, $p = .528$ | −0.014, $p = .192$ | −0.028, $p = .002$ | 0.001, $p = .952$ |
| Trait O | −0.001, $p = .907$ | −0.006, $p = .540$ | −0.003, $p = .713$ | −0.006, $p = .469$ | 0.009, $p = .322$ | 0.002, $p = .783$ | 0.003, $p = .751$ | −0.019, $p = .032$ | −0.010, $p = .237$ | 0.001, $p = .917$ | 0.006, $p = .498$ | −0.003, $p = .731$ | 0.003, $p = .781$ | −0.008, $p = .342$ | 0.013, $p = .148$ |
| Trait H | 0.010, $p = .216$ | −0.020, $p = .034$ | −0.020, $p = .033$ | −0.003, $p = .757$ | 0.014, $p = .130$ | 0.014, $p = .115$ | 0.011, $p = .221$ | −0.023, $p = .020$ | −0.004, $p = .650$ | 0.006, $p = .507$ | 0.003, $p = .724$ | −0.003, $p = .723$ | 0.012, $p = .198$ | −0.001, $p = .887$ | 0.014, $p = .139$ |
| Self-negativity | | | | | | | | | | | | | | | |
| Trait E | 0.006, $p = .562$ | −0.019, $p = .101$ | 0.001, $p = .902$ | −0.001, $p = .929$ | 0.016, $p = .160$ | 0.017, $p = .116$ | −0.008, $p = .444$ | −0.006, $p = .589$ | 0.020, $p = .055$ | −0.014, $p = .205$ | 0.031, $p = .005$ | −0.025, $p = .026$ | −0.027, $p = .018$ | −0.003, $p = .801$ | 0.030, $p = .011$ |
| Trait A | 0.016, $p = .140$ | −0.010, $p = .398$ | −0.008, $p = .493$ | −0.026, $p = .015$ | 0.004, $p = .700$ | 0.007, $p = .549$ | 0.013, $p = .250$ | −0.014, $p = .234$ | 0.002, $p = .850$ | 0.012, $p = .282$ | 0.018, $p = .111$ | −0.007, $p = .530$ | −0.036, $p = .001$ | −0.026, $p = .010$ | 0.012, $p = .308$ |
| Trait C | 0.016, $p = .076$ | −0.014, $p = .181$ | −0.004, $p = .691$ | −0.018, $p = .069$ | 0.006, $p = .586$ | 0.016, $p = .114$ | 0.019, $p = .060$ | −0.009, $p = .390$ | 0.020, $p = .048$ | 0.005, $p = .629$ | −0.003, $p = .744$ | 0.002, $p = .882$ | **−0.036, $p < .001$** | −0.003, $p = .727$ | 0.010, $p = .358$ |
| Trait N[a] | −0.012, $p = .279$ | 0.014, $p = .244$ | 0.003, $p = .776$ | 0.013, $p = .278$ | −0.003, $p = .789$ | −0.018, $p = .119$ | −0.015, $p = .182$ | 0.006, $p = .614$ | −0.023, $p = .029$ | 0.000, $p = .983$ | −0.002, $p = .864$ | −0.005, $p = .680$ | 0.034, $p = .004$ | 0.003, $p = .797$ | −0.004, $p = .723$ |
| Trait O | 0.028, $p = .003$ | −0.026, $p = .021$ | −0.028, $p = .009$ | −0.025, $p = .016$ | 0.019, $p = .088$ | 0.024, $p = .024$ | 0.017, $p = .117$ | −0.019, $p = .101$ | −0.008, $p = .449$ | 0.018, $p = .109$ | 0.015, $p = .176$ | −0.014, $p = .222$ | **−0.040, $p < .001$** | −0.021, $p = .042$ | **0.036, $p < .001$** |
| Trait H | 0.011, $p = .296$ | −0.003, $p = .809$ | −0.017, $p = .115$ | **−0.035, $p < .001$** | 0.004, $p = .692$ | 0.005, $p = .670$ | −0.002, $p = .823$ | −0.013, $p = .247$ | −0.026, $p = .012$ | 0.019, $p = .063$ | 0.011, $p = .338$ | −0.012, $p = .264$ | −0.008, $p = .443$ | −0.026, $p = .005$ | 0.002, $p = .842$ |

*Note*. Shown are regression coefficients for interaction effects with country-level moderators. Cells are colored if an interaction with $p < .05$ indicated a stronger (orange) or weaker (blue) association (in the direction of the average effect, only for average effects with $p < .05$) for countries high on this variable, respectively. Sample sizes ranged from 14,163 to 15,221 participants ($Mdn = 14,480$) from 55 to 62 countries ($Mdn = 58$); see our Open Science Framework project for details at https://osf.io/c4emf. Estimates with $p < .001$ are presented in bold. Beh. = behavioral state; Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility; SC = self-construal; nSES = national socioeconomic status operationalized using the Human Development Index; DV = dependent variable. See the online article for the color version of this table.

[a] Expected association.

**Figure 5**

*Illustrative Moderation Effects by Country-Level Variables: Personality Trait–Behavioral State Associations*




*Note*. Shown are illustrative moderation effects by embeddedness for all expected personality trait–behavioral state associations. Individual gray lines represent predicted values for specific countries. For visualizations of all interaction effects, see additional online Figure S2 (https://osf.io/c4emf). Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait H = Honesty-Humility. See the online article for the color version of this figure.
* $p < .05$. ** $p < .001$.

(weaker P–S associations) as well as hierarchy (stronger P–S associations).

## RQ4: Personality Trait × Situation Characteristic (P × S) Interactions Across Countries

To examine P × S interactions across countries, we predicted one behavioral state (Agency, Enthusiasm, Self-Negativity) by one trait (Extraversion, Agreeableness, Conscientiousness, Neuroticism, Openness, Honesty-Humility) and one situation characteristic (Duty, Intellect, Adversity, Mating, pOsitivity, Negativity, Sociality) each, including their interaction. Separate multilevel models for all variable combinations were implemented, modeling all possible random slopes of predictors across countries. We examined the average P × S interaction (fixed effect) and country differences in P × S interactions (random slope for the interaction term). Results are presented separately for expected and unexpected variable combinations (see Table 1).

Table 8 compiles P × S interactions in the prediction of behavioral states. Expected interaction effects are visualized in Figure 7. The average effect size for P × S interactions was small, with $\overline{|B|} = .020$ for expected and $\overline{|B|} = .010$ for unexpected interaction effects. Moreover, compared to associations among elements of the Personality Triad (see previously), the overall rate of statistical significance for interactions was relatively low (overall: four of 126 [3.17%] at $\alpha = .001$ and 23 of 126 [18.25%] at $\alpha = .05$), despite exceeding chance level.

Expected interaction effects tended to be statistically significant more frequently (three of nine [33.33%] at $\alpha = .001$ and four of nine [44.44%] at $\alpha = .05$). The following interaction effects were significant at $\alpha = .001$: Trait Neuroticism was linked to a more positive association between situational Adversity and Self-Negativity ($B = .029$), to a more negative association between situational pOsitivity and Self-Negativity ($B = -.049$), and to a more positive association between situational Negativity and Self-Negativity ($B = .037$). In addition to these expected effects, trait Openness was associated with a more negative association between situational Negativity and Enthusiasm ($B = -.029$). At the more liberal $\alpha = .05$ level, one further expected interaction effect was significant: Trait

**Table 6**
*Personality Trait–Situation Characteristic Associations Across Countries*

| DV: Situation characteristic<br>Personality trait | Average association: $B$ | Country differences: σ |
|---|---|---|
| Duty | | |
| Trait E | −0.002 [−0.019, 0.014], $p = .784$ | 0.015 [0.001, 0.040], $W = .634$ |
| Trait A | 0.020 [0.001, 0.038], $p = .039$ | 0.031 [0.003, 0.060], $W = .313$ |
| Trait C[a] | **0.054 [0.038, 0.071], $p < .001$** | 0.013 [0.001, 0.035], $W = .680$ |
| Trait N | −0.021 [−0.037, −0.004], $p = .014$ | 0.010 [0.000, 0.032], $W = .740$ |
| Trait O | 0.005 [−0.012, 0.022], $p = .526$ | 0.018 [0.001, 0.046], $W = .564$ |
| Trait H | **0.035 [0.016, 0.052], $p < .001$** | 0.022 [0.001, 0.050], $W = .576$ |
| Intellect | | |
| Trait E | **0.030 [0.013, 0.046], $p < .001$** | 0.013 [0.001, 0.036], $W = .565$ |
| Trait A | 0.026 [0.005, 0.045], $p = .013$ | 0.038 [0.006, 0.067], $W = .109$ |
| Trait C | 0.026 [0.008, 0.044], $p = .005$ | 0.022 [0.001, 0.052], $W = .625$ |
| Trait N | **−0.055 [−0.072, −0.038], $p < .001$** | 0.016 [0.001, 0.050], $W = .662$ |
| Trait O[a] | **0.130 [0.112, 0.148], $p < .001$** | 0.026 [0.003, 0.050], $W = .112$ |
| Trait H | **0.042 [0.025, 0.060], $p < .001$** | 0.019 [0.001, 0.054], $W = .696$ |
| Adversity | | |
| Trait E | **−0.052 [−0.074, −0.033], $p < .001$** | 0.045 [0.021, 0.072], $W = .002$ |
| Trait A[a] | **−0.085 [−0.107, −0.063], $p < .001$** | 0.051 [0.011, 0.081], $W = .009$ |
| Trait C | **−0.044 [−0.063, −0.025], $p < .001$** | 0.034 [0.007, 0.061], $W = .122$ |
| Trait N[a] | **0.064 [0.045, 0.083], $p < .001$** | 0.034 [0.007, 0.062], $W = .127$ |
| Trait O | **−0.076 [−0.096, −0.056], $p < .001$** | 0.039 [0.006, 0.069], $W = .091$ |
| Trait H[a] | **−0.044 [−0.063, −0.027], $p < .001$** | 0.023 [0.001, 0.056], $W = .619$ |
| Mating | | |
| Trait E[a] | **0.046 [0.030, 0.063], $p < .001$** | 0.012 [0.000, 0.035], $W = .698$ |
| Trait A | −0.019 [−0.036, −0.002], $p = .029$ | 0.016 [0.001, 0.041], $W = .643$ |
| Trait C | −0.014 [−0.030, 0.002], $p = .097$ | 0.011 [0.001, 0.035], $W = .712$ |
| Trait N | 0.006 [−0.011, 0.022], $p = .485$ | 0.010 [0.000, 0.033], $W = .738$ |
| Trait O | −0.001 [−0.021, 0.018], $p = .928$ | 0.036 [0.007, 0.066], $W = .066$ |
| Trait H | **−0.093 [−0.111, −0.076], $p < .001$** | 0.020 [0.001, 0.053], $W = .664$ |
| pOsitivity | | |
| Trait E[a] | **0.037 [0.020, 0.055], $p < .001$** | 0.022 [0.001, 0.051], $W = .511$ |
| Trait A | **0.050 [0.029, 0.070], $p < .001$** | **0.048 [0.023, 0.074], $W < .001$** |
| Trait C | −0.024 [−0.041, −0.008], $p = .004$ | 0.011 [0.001, 0.037], $W = .750$ |
| Trait N[a] | **−0.101 [−0.117, −0.085], $p < .001$** | 0.010 [0.000, 0.035], $W = .697$ |
| Trait O | 0.028 [0.009, 0.046], $p = .005$ | 0.031 [0.008, 0.055], $W = .104$ |
| Trait H | 0.021 [0.004, 0.039], $p = .015$ | 0.017 [0.001, 0.047], $W = .629$ |
| Negativity | | |
| Trait E[a] | **−0.105 [−0.122, −0.087], $p < .001$** | 0.019 [0.001, 0.049], $W = .585$ |
| Trait A | **−0.072 [−0.091, −0.053], $p < .001$** | 0.037 [0.017, 0.060], $W = .003$ |
| Trait C | **−0.042 [−0.060, −0.025], $p < .001$** | 0.021 [0.001, 0.050], $W = .644$ |
| Trait N[a] | **0.140 [0.124, 0.157], $p < .001$** | 0.011 [0.001, 0.038], $W = .763$ |
| Trait O | −0.025 [−0.042, −0.007], $p = .007$ | 0.015 [0.001, 0.045], $W = .692$ |
| Trait H | 0.002 [−0.015, 0.019], $p = .830$ | 0.022 [0.002, 0.047], $W = .348$ |
| Sociality | | |
| Trait E[a] | **0.055 [0.038, 0.072], $p < .001$** | 0.017 [0.001, 0.040], $W = .500$ |
| Trait A[a] | **0.095 [0.073, 0.116], $p < .001$** | 0.050 [0.022, 0.076], $W = .002$ |
| Trait C | 0.017 [0.001, 0.034], $p = .041$ | 0.015 [0.001, 0.043], $W = .738$ |
| Trait N | **−0.042 [−0.061, −0.023], $p < .001$** | 0.033 [0.009, 0.058], $W = .053$ |
| Trait O | 0.030 [0.011, 0.050], $p = .003$ | 0.038 [0.008, 0.065], $W = .068$ |
| Trait H | **0.058 [0.042, 0.075], $p < .001$** | 0.013 [0.001, 0.044], $W = .721$ |
| Average | 0.046 (0.034) [−0.105, 0.140] | 0.024 (0.012) [0.010, 0.051] |
| Expected | 0.080 (0.035) [−0.105, 0.140] | 0.024 (0.014) [0.010, 0.051] |
| Unexpected | 0.033 (0.023) [−0.093, 0.058] | 0.024 (0.011) [0.010, 0.048] |

*Note*. Estimates are shown together with 95% credible intervals. Averages are shown in the format mean (standard deviation) [minimum, maximum], with mean and standard deviation based on absolute values. Sample sizes ranged from 15,194 to 15,201 participants (*Mdn* = 15,197) from 62 countries; see our Open Science Framework project for details at https://osf.io/c4emf. Estimates with $p < .001$ or $W < .001$ are presented in bold. Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility; DV = dependent variable; $B$ = fixed effect representing the average association; σ = random slope standard deviation representing country differences in the association; $W$ = WAIC weight of the random intercept-only model representing fit improvement when modeling the random slope.
[a] Expected association.

**Table 7**

*Country-Level Moderators of Personality Trait–Situation Characteristic Associations*

| DV: Sit.Char Trait | Harmony | Embeddedness | Hierarchy | Mastery | Affective autonomy | Intellectual autonomy | Egalitarianism | Collectivism | Tightness | SC: Self-expression | SC: Self-interest | SC: Consistency | Independent happiness | Interdependent happiness | nSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Duty | | | | | | | | | | | | | | | |
| Trait E | 0.014, $p = .075$ | −0.007, $p = .436$ | −0.010, $p = .268$ | −0.004, $p = .637$ | 0.003, $p = .762$ | 0.008, $p = .344$ | 0.014, $p = .099$ | −0.010, $p = .286$ | 0.001, $p = .951$ | 0.004, $p = .691$ | −0.004, $p = .643$ | 0.005, $p = .559$ | −0.004, $p = .695$ | 0.001, $p = .915$ | −0.006, $p = .530$ |
| Trait A | −0.012, $p = .185$ | 0.017, $p = .090$ | 0.013, $p = .201$ | 0.021, $p = .028$ | −0.016, $p = .092$ | −0.015, $p = .114$ | −0.005, $p = .645$ | 0.013, $p = .160$ | −0.006, $p = .505$ | 0.002, $p = .806$ | −0.001, $p = .934$ | 0.003, $p = .740$ | −0.002, $p = .822$ | 0.006, $p = .543$ | −0.010, $p = .319$ |
| Trait C[a] | 0.002, $p = .777$ | 0.007, $p = .437$ | 0.000, $p = .996$ | 0.005, $p = .564$ | −0.005, $p = .554$ | −0.007, $p = .383$ | −0.012, $p = .160$ | 0.001, $p = .934$ | −0.010, $p = .224$ | 0.007, $p = .414$ | 0.015, $p = .111$ | −0.003, $p = .709$ | 0.001, $p = .942$ | −0.001, $p = .872$ | 0.003, $p = .761$ |
| Trait N | −0.003, $p = .654$ | −0.004, $p = .691$ | 0.004, $p = .641$ | 0.006, $p = .503$ | 0.007, $p = .418$ | 0.000, $p = .962$ | −0.018, $p = .038$ | 0.009, $p = .319$ | 0.012, $p = .144$ | −0.008, $p = .347$ | 0.009, $p = .310$ | −0.004, $p = .656$ | −0.003, $p = .720$ | −0.001, $p = .938$ | 0.003, $p = .761$ |
| Trait O | −0.013, $p = .096$ | 0.013, $p = .168$ | 0.015, $p = .109$ | 0.018, $p = .040$ | −0.012, $p = .164$ | −0.015, $p = .104$ | −0.020, $p = .023$ | 0.011, $p = .244$ | 0.010, $p = .268$ | −0.023, $p = .011$ | −0.002, $p = .812$ | −0.009, $p = .332$ | 0.011, $p = .242$ | 0.015, $p = .085$ | −0.009, $p = .333$ |
| Trait H | −0.019, $p = .017$ | 0.013, $p = .150$ | 0.021, $p = .020$ | 0.017, $p = .060$ | −0.006, $p = .494$ | −0.014, $p = .102$ | −0.011, $p = .248$ | 0.013, $p = .162$ | 0.003, $p = .743$ | −0.002, $p = .796$ | 0.000, $p = .956$ | −0.002, $p = .835$ | 0.005, $p = .632$ | −0.001, $p = .943$ | −0.012, $p = .198$ |
| Intellect | | | | | | | | | | | | | | | |
| Trait E | −0.005, $p = .480$ | 0.004, $p = .646$ | 0.007, $p = .417$ | 0.009, $p = .304$ | 0.006, $p = .491$ | −0.007, $p = .454$ | −0.009, $p = .288$ | −0.005, $p = .561$ | −0.007, $p = .398$ | 0.009, $p = .295$ | 0.011, $p = .245$ | −0.002, $p = .808$ | 0.003, $p = .766$ | −0.005, $p = .559$ | −0.008, $p = .419$ |
| Trait A | −0.001, $p = .915$ | −0.007, $p = .476$ | 0.004, $p = .688$ | 0.000, $p = .973$ | 0.013, $p = .205$ | 0.014, $p = .158$ | −0.012, $p = .257$ | −0.004, $p = .743$ | 0.007, $p = .473$ | 0.002, $p = .805$ | 0.012, $p = .254$ | −0.009, $p = .390$ | −0.001, $p = .892$ | −0.003, $p = .784$ | 0.010, $p = .341$ |
| Trait C | −0.010, $p = .257$ | 0.016, $p = .088$ | 0.009, $p = .353$ | 0.020, $p = .032$ | −0.015, $p = .101$ | −0.010, $p = .243$ | −0.008, $p = .374$ | 0.016, $p = .118$ | −0.002, $p = .787$ | −0.003, $p = .754$ | 0.005, $p = .613$ | 0.013, $p = .186$ | 0.022, $p = .026$ | 0.014, $p = .123$ | −0.020, $p = .031$ |
| Trait N | 0.014, $p = .085$ | −0.017, $p = .079$ | −0.021, $p = .025$ | −0.016, $p = .071$ | 0.008, $p = .411$ | 0.014, $p = .104$ | 0.013, $p = .143$ | −0.009, $p = .351$ | −0.002, $p = .786$ | 0.004, $p = .662$ | −0.006, $p = .515$ | −0.006, $p = .538$ | 0.007, $p = .492$ | −0.004, $p = .646$ | 0.019, $p = .043$ |
| Trait O[a] | −0.002, $p = .765$ | −0.001, $p = .929$ | −0.006, $p = .502$ | 0.008, $p = .366$ | 0.001, $p = .869$ | 0.004, $p = .645$ | −0.002, $p = .847$ | −0.011, $p = .233$ | −0.010, $p = .240$ | 0.013, $p = .187$ | 0.000, $p = .965$ | 0.014, $p = .149$ | 0.017, $p = .094$ | 0.006, $p = .502$ | −0.002, $p = .846$ |
| Trait H | −0.002, $p = .821$ | 0.006, $p = .552$ | 0.006, $p = .500$ | 0.010, $p = .259$ | −0.002, $p = .846$ | 0.000, $p = .989$ | −0.006, $p = .488$ | 0.010, $p = .292$ | −0.006, $p = .538$ | 0.002, $p = .805$ | 0.004, $p = .693$ | 0.000, $p = .984$ | 0.016, $p = .086$ | 0.021, $p = .013$ | −0.010, $p = .288$ |
| Adversity | | | | | | | | | | | | | | | |
| Trait E | 0.013, $p = .161$ | −0.029, $p = .003$ | −0.020, $p = .038$ | −0.004, $p = .671$ | 0.028, $p = .003$ | 0.022, $p = .024$ | 0.012, $p = .228$ | −0.028, $p = .007$ | 0.012, $p = .252$ | −0.020, $p = .060$ | 0.003, $p = .799$ | −0.023, $p = .032$ | −0.020, $p = .064$ | 0.004, $p = .717$ | **0.040, $p < .001$** |
| Trait A[a] | 0.012, $p = .224$ | 0.007, $p = .507$ | −0.007, $p = .535$ | −0.013, $p = .202$ | −0.017, $p = .101$ | −0.008, $p = .434$ | 0.014, $p = .194$ | 0.001, $p = .919$ | −0.010, $p = .376$ | 0.005, $p = .643$ | 0.010, $p = .380$ | 0.006, $p = .600$ | −0.014, $p = .218$ | −0.008, $p = .429$ | −0.002, $p = .827$ |
| Trait C | 0.014, $p = .083$ | −0.004, $p = .683$ | −0.015, $p = .106$ | **−0.036, $p < .001$** | −0.003, $p = .714$ | 0.012, $p = .193$ | 0.018, $p = .046$ | −0.016, $p = .099$ | −0.002, $p = .859$ | 0.014, $p = .174$ | 0.008, $p = .445$ | −0.004, $p = .694$ | −0.014, $p = .194$ | −0.015, $p = .104$ | 0.013, $p = .176$ |
| Trait N[a] | −0.019, $p = .035$ | 0.022, $p = .025$ | 0.022, $p = .021$ | 0.010, $p = .328$ | −0.015, $p = .115$ | −0.016, $p = .083$ | −0.029, $p = .001$ | 0.024, $p = .011$ | −0.002, $p = .806$ | 0.008, $p = .422$ | 0.005, $p = .647$ | 0.013, $p = .190$ | 0.027, $p = .008$ | 0.006, $p = .526$ | −0.018, $p = .072$ |
| Trait O | 0.019, $p = .038$ | −0.021, $p = .039$ | −0.019, $p = .052$ | −0.013, $p = .158$ | 0.012, $p = .234$ | 0.020, $p = .035$ | 0.010, $p = .319$ | −0.014, $p = .174$ | −0.005, $p = .629$ | 0.004, $p = .699$ | 0.015, $p = .140$ | −0.019, $p = .067$ | −0.011, $p = .303$ | −0.011, $p = .271$ | 0.017, $p = .086$ |
| Trait H[a] | 0.002, $p = .767$ | 0.004, $p = .627$ | −0.005, $p = .610$ | −0.015, $p = .074$ | −0.007, $p = .392$ | −0.002, $p = .795$ | 0.010, $p = .237$ | −0.008, $p = .381$ | −0.007, $p = .459$ | 0.004, $p = .679$ | 0.001, $p = .880$ | −0.001, $p = .936$ | −0.026, $p = .005$ | −0.017, $p = .049$ | 0.005, $p = .627$ |
| Mating | | | | | | | | | | | | | | | |
| Trait E[a] | 0.009, $p = .244$ | 0.001, $p = .878$ | −0.003, $p = .709$ | −0.010, $p = .254$ | −0.007, $p = .425$ | −0.001, $p = .936$ | −0.005, $p = .534$ | 0.000, $p = .966$ | −0.001, $p = .925$ | −0.003, $p = .751$ | 0.011, $p = .238$ | −0.006, $p = .528$ | −0.008, $p = .413$ | −0.003, $p = .739$ | 0.007, $p = .461$ |
| Trait A | 0.003, $p = .676$ | −0.017, $p = .068$ | −0.005, $p = .586$ | −0.004, $p = .629$ | 0.018, $p = .037$ | 0.013, $p = .130$ | 0.006, $p = .496$ | −0.015, $p = .096$ | −0.007, $p = .444$ | 0.009, $p = .329$ | 0.003, $p = .775$ | −0.008, $p = .407$ | 0.001, $p = .927$ | −0.008, $p = .352$ | 0.012, $p = .170$ |
| Trait C | 0.005, $p = .558$ | −0.008, $p = .354$ | −0.002, $p = .844$ | −0.016, $p = .057$ | 0.012, $p = .158$ | 0.008, $p = .332$ | −0.004, $p = .657$ | −0.006, $p = .544$ | 0.010, $p = .246$ | −0.002, $p = .849$ | 0.006, $p = .492$ | −0.015, $p = .095$ | 0.002, $p = .868$ | −0.001, $p = .871$ | 0.008, $p = .389$ |
| Trait N | 0.000, $p = .956$ | 0.001, $p = .918$ | 0.000, $p = .989$ | 0.007, $p = .428$ | 0.003, $p = .693$ | 0.006, $p = .484$ | 0.010, $p = .262$ | −0.007, $p = .454$ | −0.003, $p = .752$ | 0.010, $p = .248$ | −0.010, $p = .269$ | 0.017, $p = .059$ | −0.004, $p = .706$ | 0.001, $p = .877$ | −0.002, $p = .851$ |

(*table continues*)

**Table 7** (*continued*)

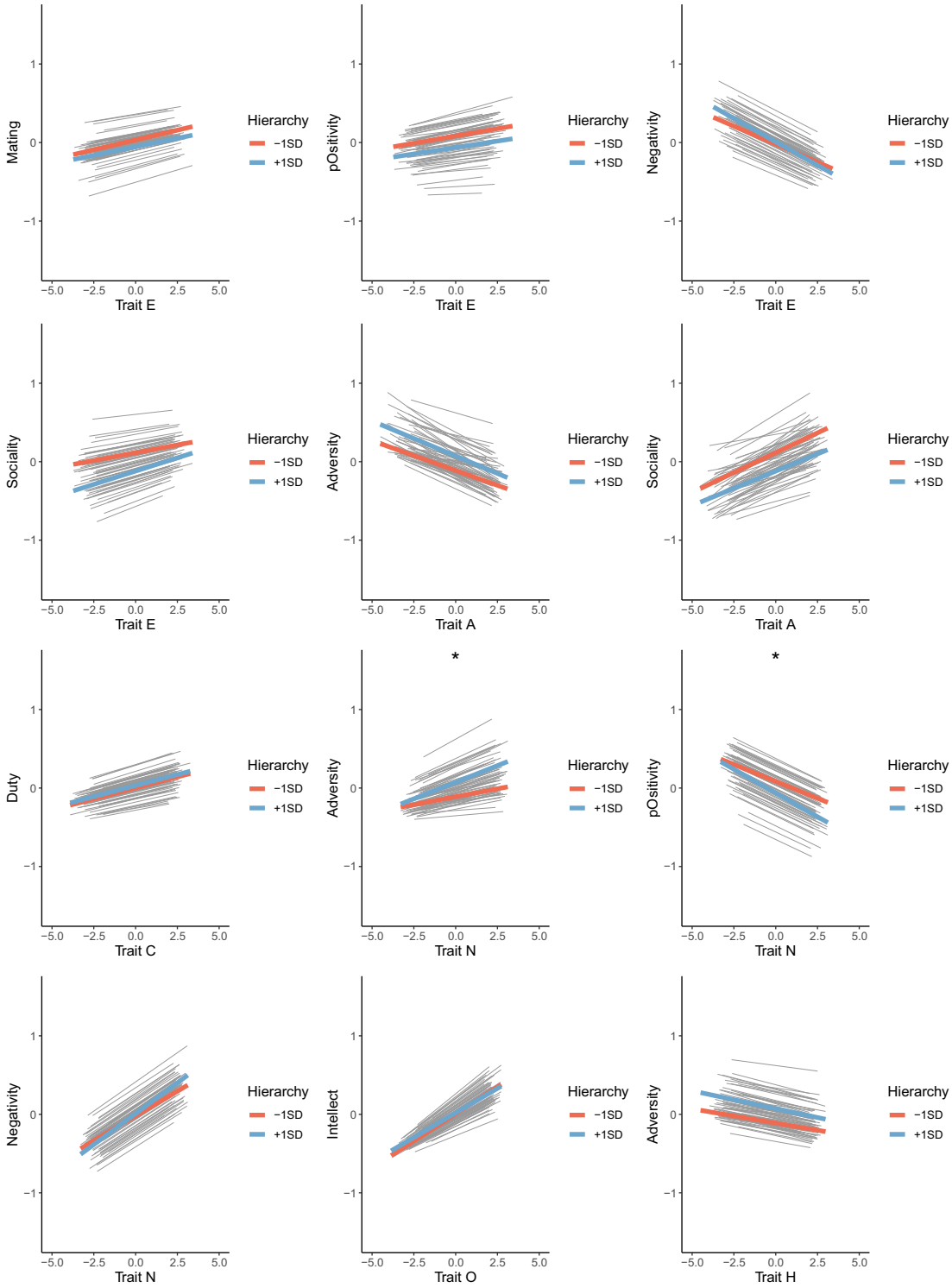
| DV: Sit.Char Trait | Harmony | Embeddedness | Hierarchy | Mastery | Affective autonomy | Intellectual autonomy | Egalitarianism | Collectivism | Tightness | SC: Self-expression | SC: Self-interest | SC: Consistency | Independent happiness | Interdependent happiness | nSES |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Trait O | 0.007, | −0.030, | −0.009, | 0.008, | 0.027, | 0.017, | 0.021, | −0.024, | −0.003, | 0.009, | 0.006, | 0.005, | −0.014, | −0.013, | 0.026, |
| | $p = .451$ | $p = .002$ | $p = .396$ | $p = .448$ | $p = .006$ | $p = .095$ | $p = .038$ | $p = .018$ | $p = .774$ | $p = .412$ | $p = .562$ | $p = .640$ | $p = .192$ | $p = .191$ | $p = .012$ |
| Trait H | 0.013, | −0.016, | −0.019, | 0.000, | 0.013, | 0.013, | 0.019, | −0.018, | −0.009, | 0.016, | 0.005, | 0.003, | 0.000, | −0.015, | 0.010, |
| | $p = .122$ | $p = .076$ | $p = .033$ | $p = .986$ | $p = .154$ | $p = .142$ | $p = .035$ | $p = .058$ | $p = .341$ | $p = .078$ | $p = .579$ | $p = .732$ | $p = .985$ | $p = .095$ | $p = .269$ |
| pOsitivity | | | | | | | | | | | | | | | |
| Trait E[a] | 0.002, | −0.008, | −0.002, | 0.004, | 0.003, | 0.009, | −0.004, | −0.004, | 0.000, | 0.000, | −0.003, | 0.003, | −0.004, | −0.002, | 0.013, |
| | $p = .837$ | $p = .403$ | $p = .792$ | $p = .609$ | $p = .774$ | $p = .298$ | $p = .669$ | $p = .646$ | $p = .996$ | $p = .964$ | $p = .701$ | $p = .710$ | $p = .670$ | $p = .786$ | $p = .175$ |
| Trait A | −0.002, | −0.025, | −0.003, | 0.010, | 0.024, | 0.017, | −0.012, | −0.013, | 0.014, | −0.022, | −0.003, | −0.023, | −0.003, | 0.012, | 0.026, |
| | $p = .814$ | $p = .020$ | $p = .809$ | $p = .328$ | $p = .022$ | $p = .099$ | $p = .267$ | $p = .251$ | $p = .189$ | $p = .040$ | $p = .765$ | $p = .031$ | $p = .810$ | $p = .238$ | $p = .016$ |
| Trait C | −0.002, | −0.003, | 0.005, | 0.015, | 0.007, | 0.001, | −0.018, | 0.003, | 0.006, | −0.017, | −0.003, | −0.007, | 0.010, | 0.017, | 0.001, |
| | $p = .760$ | $p = .716$ | $p = .548$ | $p = .062$ | $p = .362$ | $p = .913$ | $p = .034$ | $p = .719$ | $p = .464$ | $p = .056$ | $p = .737$ | $p = .410$ | $p = .294$ | $p = .036$ | $p = .893$ |
| Trait N[a] | 0.003, | −0.011, | −0.018, | −0.005, | 0.008, | 0.006, | 0.023, | −0.014, | 0.002, | −0.001, | −0.013, | 0.006, | −0.008, | 0.002, | 0.006, |
| | $p = .646$ | $p = .211$ | $p = .043$ | $p = .548$ | $p = .370$ | $p = .462$ | $p = .006$ | $p = .115$ | $p = .792$ | $p = .937$ | $p = .152$ | $p = .531$ | $p = .413$ | $p = .764$ | $p = .541$ |
| Trait O | 0.002, | −0.016, | −0.017, | −0.002, | 0.019, | 0.015, | 0.013, | −0.025, | −0.004, | −0.002, | −0.018, | 0.003, | 0.006, | 0.015, | 0.025, |
| | $p = .823$ | $p = .082$ | $p = .050$ | $p = .796$ | $p = .035$ | $p = .096$ | $p = .126$ | $p = .008$ | $p = .651$ | $p = .840$ | $p = .070$ | $p = .760$ | $p = .546$ | $p = .108$ | $p = .010$ |
| Trait H | −0.004, | 0.004, | −0.002, | 0.010, | −0.003, | −0.006, | −0.010, | 0.003, | 0.011, | −0.013, | 0.002, | −0.009, | 0.015, | 0.026, | 0.002, |
| | $p = .577$ | $p = .670$ | $p = .863$ | $p = .268$ | $p = .721$ | $p = .514$ | $p = .270$ | $p = .735$ | $p = .204$ | $p = .153$ | $p = .829$ | $p = .311$ | $p = .111$ | $p = .002$ | $p = .859$ |
| Negativity | | | | | | | | | | | | | | | |
| Trait E[a] | 0.002, | −0.003, | −0.014, | 0.001, | 0.007, | 0.005, | 0.014, | −0.009, | −0.004, | 0.007, | −0.006, | 0.005, | 0.016, | 0.011, | −0.007, |
| | $p = .788$ | $p = .790$ | $p = .132$ | $p = .900$ | $p = .448$ | $p = .597$ | $p = .110$ | $p = .338$ | $p = .625$ | $p = .429$ | $p = .497$ | $p = .569$ | $p = .104$ | $p = .198$ | $p = .496$ |
| Trait A | 0.001, | 0.016, | 0.004, | 0.005, | −0.012, | −0.014, | 0.006, | 0.007, | −0.007, | 0.013, | 0.005, | 0.016, | −0.002, | −0.007, | −0.011, |
| | $p = .886$ | $p = .112$ | $p = .702$ | $p = .599$ | $p = .221$ | $p = .159$ | $p = .542$ | $p = .515$ | $p = .501$ | $p = .203$ | $p = .642$ | $p = .104$ | $p = .858$ | $p = .489$ | $p = .283$ |
| Trait C | 0.024, | −0.022, | −0.027, | −0.017, | 0.006, | 0.025, | **0.037,** | −0.021, | −0.012, | 0.027, | −0.009, | 0.021, | 0.001, | −0.003, | 0.015, |
| | $p = .003$ | $p = .018$ | $p = .003$ | $p = .057$ | $p = .473$ | $p = .005$ | **$p < .001$** | $p = .025$ | $p = .179$ | $p = .003$ | $p = .328$ | $p = .023$ | $p = .884$ | $p = .765$ | $p = .098$ |
| Trait N[a] | −0.009, | 0.013, | 0.015, | −0.001, | −0.012, | −0.015, | −0.028, | 0.017, | 0.001, | −0.019, | 0.022, | −0.025, | −0.006, | −0.009, | −0.003, |
| | $p = .243$ | $p = .158$ | $p = .079$ | $p = .935$ | $p = .182$ | $p = .067$ | $p = .001$ | $p = .059$ | $p = .870$ | $p = .035$ | $p = .015$ | $p = .006$ | $p = .539$ | $p = .274$ | $p = .771$ |
| Trait O | 0.003, | 0.004, | −0.003, | −0.004, | −0.009, | 0.000, | −0.008, | 0.007, | 0.001, | 0.010, | 0.007, | 0.006, | −0.005, | −0.001, | 0.000, |
| | $p = .662$ | $p = .683$ | $p = .768$ | $p = .633$ | $p = .274$ | $p = .953$ | $p = .379$ | $p = .418$ | $p = .912$ | $p = .265$ | $p = .474$ | $p = .533$ | $p = .595$ | $p = .891$ | $p = .986$ |
| Trait H | −0.005, | 0.021, | 0.010, | −0.003, | −0.011, | −0.013, | −0.008, | 0.016, | −0.006, | 0.003, | −0.001, | 0.010, | 0.002, | −0.003, | −0.013, |
| | $p = .506$ | $p = .022$ | $p = .282$ | $p = .700$ | $p = .199$ | $p = .133$ | $p = .373$ | $p = .078$ | $p = .533$ | $p = .721$ | $p = .933$ | $p = .306$ | $p = .876$ | $p = .715$ | $p = .161$ |
| Sociality | | | | | | | | | | | | | | | |
| Trait E[a] | −0.016, | 0.020, | 0.014, | 0.006, | −0.013, | −0.018, | −0.013, | 0.015, | 0.002, | −0.009, | −0.005, | −0.002, | 0.001, | 0.000, | −0.019, |
| | $p = .036$ | $p = .031$ | $p = .113$ | $p = .504$ | $p = .146$ | $p = .035$ | $p = .128$ | $p = .104$ | $p = .854$ | $p = .329$ | $p = .585$ | $p = .833$ | $p = .942$ | $p = .974$ | $p = .048$ |
| Trait A[a] | −0.006, | −0.016, | −0.007, | 0.007, | 0.007, | 0.015, | 0.004, | −0.005, | 0.007, | −0.010, | −0.016, | −0.003, | 0.003, | 0.012, | 0.009, |
| | $p = .563$ | $p = .140$ | $p = .556$ | $p = .506$ | $p = .539$ | $p = .171$ | $p = .751$ | $p = .682$ | $p = .522$ | $p = .347$ | $p = .168$ | $p = .810$ | $p = .810$ | $p = .240$ | $p = .400$ |
| Trait C | −0.018, | 0.006, | 0.017, | 0.006, | −0.001, | −0.009, | −0.013, | 0.008, | 0.018, | −0.023, | −0.007, | −0.013, | 0.003, | 0.010, | −0.007, |
| | $p = .022$ | $p = .489$ | $p = .055$ | $p = .459$ | $p = .944$ | $p = .301$ | $p = .134$ | $p = .359$ | $p = .041$ | $p = .011$ | $p = .437$ | $p = .154$ | $p = .750$ | $p = .249$ | $p = .448$ |
| Trait N | 0.019, | −0.026, | −0.029, | −0.008, | 0.023, | 0.023, | **0.030,** | **−0.035,** | −0.010, | 0.007, | −0.010, | 0.001, | −0.007, | −0.001, | 0.023, |
| | $p = .023$ | $p = .007$ | $p = .001$ | $p = .368$ | $p = .011$ | $p = .012$ | **$p < .001$** | **$p < .001$** | $p = .303$ | $p = .504$ | $p = .301$ | $p = .913$ | $p = .517$ | $p = .882$ | $p = .019$ |
| Trait O | −0.002, | 0.009, | 0.001, | −0.008, | −0.007, | −0.008, | −0.010, | 0.003, | −0.018, | 0.015, | −0.013, | 0.016, | 0.028, | 0.010, | −0.014, |
| | $p = .856$ | $p = .362$ | $p = .905$ | $p = .449$ | $p = .496$ | $p = .448$ | $p = .324$ | $p = .791$ | $p = .062$ | $p = .148$ | $p = .218$ | $p = .128$ | $p = .007$ | $p = .326$ | $p = .157$ |
| Trait H | 0.001, | 0.000, | 0.000, | 0.003, | −0.001, | −0.001, | −0.012, | 0.003, | 0.001, | −0.011, | −0.009, | −0.006, | 0.018, | 0.017, | −0.006, |
| | $p = .869$ | $p = .955$ | $p = .986$ | $p = .749$ | $p = .927$ | $p = .913$ | $p = .166$ | $p = .775$ | $p = .914$ | $p = .200$ | $p = .331$ | $p = .467$ | $p = .046$ | $p = .035$ | $p = .520$ |

*Note*. Shown are regression coefficients for interaction effects with country-level moderators. Cells are colored if an interaction with $p < .05$ indicated a stronger (orange) or weaker (blue) association (in the direction of the average effect, only for average effects with $p < .05$) for countries high on this variable, respectively. Sample sizes ranged from 14,136 to 15,201 participants ($Mdn = 14{,}461$) from 55 to 62 countries ($Mdn = 58$); see our Open Science Framework project for details. Estimates with $p < .001$ are presented in bold. Sit.Char = situation characteristic; Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility; SC = self-construal; nSES = national socioeconomic status operationalized using the Human Development Index; DV = dependent variable. See the online article for the color version of this table.

[a] Expected association.

**Figure 6**

*Illustrative Moderation Effects by Country-Level Variables: Personality Trait–Situation Characteristic Associations*




*Note*. Shown are illustrative moderation effects by hierarchy for all expected personality trait–situation characteristic associations. Individual gray lines represent predicted values for specific countries. For visualizations of all interaction effects, see additional online Figure S3 (https://osf.io/c4emf). Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility. See the online article for the color version of this figure.

* $p < .05$.

**Table 8**
*Personality Trait × Situation Characteristic Interactions in the Prediction of Behavioral States Across Countries*

| S–B association<br>Trait moderator | Average interaction: *B* | Country differences: σ |
|---|---|---|
| Duty → agency | | |
| Trait E | 0.009 [−0.007, 0.024], $p = .272$ | 0.009 [0.000, 0.030], $W = .679$ |
| Trait A | 0.021 [0.004, 0.038], $p = .013$ | 0.025 [0.002, 0.051], $W = .153$ |
| Trait C[a] | 0.018 [0.003, 0.034], $p = .019$ | 0.008 [0.000, 0.026], $W = .706$ |
| Trait N | 0.009 [−0.007, 0.025], $p = .266$ | 0.013 [0.001, 0.043], $W = .704$ |
| Trait O | 0.016 [0.000, 0.031], $p = .046$ | 0.007 [0.000, 0.024], $W = .729$ |
| Trait H | 0.007 [−0.009, 0.022], $p = .389$ | 0.011 [0.001, 0.033], $W = .767$ |
| Intellect → agency | | |
| Trait E | −0.006 [−0.022, 0.010], $p = .467$ | 0.012 [0.001, 0.041], $W = .698$ |
| Trait A | −0.005 [−0.024, 0.013], $p = .564$ | 0.031 [0.003, 0.059], $W = .293$ |
| Trait C | 0.006 [−0.010, 0.021], $p = .449$ | 0.010 [0.000, 0.033], $W = .820$ |
| Trait N | 0.010 [−0.008, 0.027], $p = .269$ | 0.025 [0.001, 0.057], $W = .656$ |
| Trait O | 0.027 [0.010, 0.043], $p = .003$ | 0.015 [0.001, 0.045], $W = .649$ |
| Trait H | −0.002 [−0.020, 0.015], $p = .810$ | 0.022 [0.001, 0.052], $W = .552$ |
| Adversity → agency | | |
| Trait E | −0.001 [−0.018, 0.015], $p = .918$ | 0.013 [0.001, 0.044], $W = .717$ |
| Trait A | 0.009 [−0.007, 0.025], $p = .261$ | 0.011 [0.001, 0.036], $W = .636$ |
| Trait C | 0.008 [−0.008, 0.024], $p = .325$ | 0.011 [0.001, 0.035], $W = .684$ |
| Trait N | −0.003 [−0.019, 0.014], $p = .733$ | 0.018 [0.001, 0.048], $W = .622$ |
| Trait O | 0.004 [−0.012, 0.020], $p = .607$ | 0.011 [0.001, 0.035], $W = .689$ |
| Trait H | 0.015 [−0.003, 0.032], $p = .096$ | 0.021 [0.001, 0.048], $W = .515$ |
| Mating → agency | | |
| Trait E | −0.009 [−0.025, 0.008], $p = .297$ | 0.016 [0.001, 0.040], $W = .535$ |
| Trait A | −0.001 [−0.017, 0.016], $p = .931$ | 0.019 [0.001, 0.044], $W = .477$ |
| Trait C | 0.003 [−0.014, 0.019], $p = .748$ | 0.015 [0.001, 0.042], $W = .623$ |
| Trait N | 0.000 [−0.018, 0.017], $p = .982$ | 0.021 [0.002, 0.046], $W = .395$ |
| Trait O | 0.006 [−0.009, 0.023], $p = .442$ | 0.010 [0.001, 0.032], $W = .682$ |
| Trait H | −0.012 [−0.028, 0.004], $p = .130$ | 0.010 [0.000, 0.031], $W = .725$ |
| pOsitivity → agency | | |
| Trait E | −0.013 [−0.032, 0.008], $p = .209$ | 0.038 [0.003, 0.074], $W = .270$ |
| Trait A | −0.013 [−0.028, 0.003], $p = .116$ | 0.009 [0.000, 0.029], $W = .746$ |
| Trait C | −0.019 [−0.036, −0.002], $p = .026$ | 0.023 [0.002, 0.049], $W = .252$ |
| Trait N | 0.025 [0.007, 0.042], $p = .005$ | 0.022 [0.001, 0.054], $W = .732$ |
| Trait O | −0.003 [−0.018, 0.013], $p = .739$ | 0.009 [0.000, 0.032], $W = .694$ |
| Trait H | −0.001 [−0.018, 0.015], $p = .853$ | 0.020 [0.001, 0.047], $W = .449$ |
| Negativity → agency | | |
| Trait E | −0.002 [−0.021, 0.016], $p = .821$ | 0.031 [0.002, 0.062], $W = .407$ |
| Trait A | 0.013 [−0.004, 0.030], $p = .132$ | 0.016 [0.001, 0.040], $W = .716$ |
| Trait C | 0.004 [−0.012, 0.020], $p = .603$ | 0.013 [0.001, 0.038], $W = .637$ |
| Trait N | −0.004 [−0.020, 0.012], $p = .644$ | 0.011 [0.001, 0.035], $W = .845$ |
| Trait O | −0.003 [−0.020, 0.013], $p = .683$ | 0.013 [0.001, 0.037], $W = .700$ |
| Trait H | 0.014 [−0.002, 0.030], $p = .080$ | 0.012 [0.001, 0.040], $W = .761$ |
| Sociality → agency | | |
| Trait E | −0.010 [−0.027, 0.008], $p = .265$ | 0.023 [0.002, 0.052], $W = .443$ |
| Trait A | −0.016 [−0.032, 0.001], $p = .067$ | 0.018 [0.001, 0.040], $W = .537$ |
| Trait C | −0.020 [−0.035, −0.004], $p = .019$ | 0.012 [0.001, 0.034], $W = .744$ |
| Trait N | 0.020 [0.003, 0.036], $p = .018$ | 0.012 [0.001, 0.040], $W = .670$ |
| Trait O | −0.014 [−0.030, 0.002], $p = .087$ | 0.011 [0.001, 0.036], $W = .664$ |
| Trait H | −0.013 [−0.030, 0.004], $p = .134$ | 0.022 [0.001, 0.050], $W = .621$ |
| Duty → enthusiasm | | |
| Trait E | 0.000 [−0.018, 0.017], $p = 1.000$ | 0.023 [0.001, 0.053], $W = .531$ |
| Trait A | −0.002 [−0.018, 0.014], $p = .829$ | 0.012 [0.001, 0.036], $W = .619$ |
| Trait C | 0.016 [−0.001, 0.033], $p = .071$ | 0.018 [0.001, 0.047], $W = .454$ |
| Trait N | −0.013 [−0.029, 0.003], $p = .118$ | 0.013 [0.001, 0.041], $W = .610$ |
| Trait O | −0.020 [−0.037, −0.002], $p = .026$ | 0.017 [0.001, 0.052], $W = .759$ |
| Trait H | 0.003 [−0.014, 0.019], $p = .758$ | 0.010 [0.000, 0.033], $W = .724$ |
| Intellect → enthusiasm | | |
| Trait E | 0.019 [0.002, 0.037], $p = .028$ | 0.026 [0.002, 0.055], $W = .459$ |
| Trait A | 0.017 [0.001, 0.034], $p = .045$ | 0.018 [0.001, 0.044], $W = .700$ |
| Trait C | 0.002 [−0.018, 0.024], $p = .813$ | **0.049 [0.027, 0.074], $W < .001$** |
| Trait N | −0.013 [−0.030, 0.003], $p = .109$ | 0.013 [0.001, 0.039], $W = .578$ |
| Trait O | 0.023 [0.006, 0.040], $p = .008$ | 0.014 [0.001, 0.042], $W = .612$ |
| Trait H | 0.012 [−0.006, 0.030], $p = .187$ | 0.028 [0.003, 0.053], $W = .184$ |

(*table continues*)

**Table 8** (*continued*)

| S–B association<br>Trait moderator | Average interaction: *B* | Country differences: σ |
|---|---|---|
| Adversity → enthusiasm | | |
| Trait E | −0.018 [−0.037, 0.001], $p = .058$ | 0.035 [0.008, 0.061], $W = .027$ |
| Trait A | −0.018 [−0.034, −0.001], $p = .033$ | 0.012 [0.001, 0.037], $W = .711$ |
| Trait C | −0.005 [−0.022, 0.011], $p = .536$ | 0.012 [0.001, 0.037], $W = .696$ |
| Trait N | 0.003 [−0.013, 0.019], $p = .706$ | 0.009 [0.000, 0.032], $W = .697$ |
| Trait O | −0.003 [−0.020, 0.013], $p = .695$ | 0.013 [0.001, 0.037], $W = .731$ |
| Trait H | −0.003 [−0.019, 0.014], $p = .743$ | 0.009 [0.000, 0.030], $W = .730$ |
| Mating → enthusiasm | | |
| Trait E[a] | 0.014 [−0.002, 0.030], $p = .094$ | 0.010 [0.000, 0.033], $W = .745$ |
| Trait A | 0.011 [−0.006, 0.027], $p = .190$ | 0.011 [0.000, 0.037], $W = .628$ |
| Trait C | 0.010 [−0.007, 0.027], $p = .264$ | 0.021 [0.001, 0.047], $W = .515$ |
| Trait N | 0.014 [−0.003, 0.032], $p = .111$ | 0.024 [0.002, 0.050], $W = .276$ |
| Trait O | 0.020 [0.003, 0.037], $p = .020$ | 0.015 [0.001, 0.045], $W = .626$ |
| Trait H | −0.007 [−0.023, 0.009], $p = .382$ | 0.013 [0.001, 0.039], $W = .702$ |
| pOsitivity → enthusiasm | | |
| Trait E[a] | 0.007 [−0.011, 0.024], $p = .433$ | 0.025 [0.001, 0.055], $W = .402$ |
| Trait A | 0.013 [−0.003, 0.029], $p = .105$ | 0.011 [0.001, 0.036], $W = .701$ |
| Trait C | −0.005 [−0.021, 0.011], $p = .520$ | 0.012 [0.001, 0.035], $W = .642$ |
| Trait N | 0.003 [−0.013, 0.020], $p = .674$ | 0.014 [0.001, 0.039], $W = .696$ |
| Trait O | 0.018 [0.001, 0.035], $p = .036$ | 0.020 [0.001, 0.046], $W = .510$ |
| Trait H | 0.007 [−0.010, 0.024], $p = .418$ | 0.024 [0.002, 0.051], $W = .222$ |
| Negativity → enthusiasm | | |
| Trait E[a] | −0.014 [−0.035, 0.006], $p = .166$ | 0.047 [0.014, 0.074], $W = .012$ |
| Trait A | −0.006 [−0.025, 0.013], $p = .510$ | 0.037 [0.004, 0.066], $W = .176$ |
| Trait C | 0.009 [−0.010, 0.026], $p = .335$ | 0.032 [0.006, 0.057], $W = .153$ |
| Trait N | 0.000 [−0.017, 0.017], $p = .966$ | 0.026 [0.002, 0.050], $W = .389$ |
| Trait O | **−0.029 [−0.045, −0.013], $p < .001$** | 0.009 [0.000, 0.031], $W = .735$ |
| Trait H | 0.002 [−0.014, 0.019], $p = .771$ | 0.015 [0.001, 0.044], $W = .813$ |
| Sociality → enthusiasm | | |
| Trait E[a] | 0.003 [−0.015, 0.020], $p = .765$ | 0.026 [0.001, 0.056], $W = .479$ |
| Trait A[a] | 0.010 [−0.010, 0.030], $p = .318$ | 0.043 [0.010, 0.070], $W = .069$ |
| Trait C | −0.004 [−0.021, 0.013], $p = .650$ | 0.020 [0.001, 0.046], $W = .587$ |
| Trait N | 0.019 [−0.001, 0.037], $p = .058$ | 0.035 [0.004, 0.062], $W = .294$ |
| Trait O | 0.016 [−0.001, 0.034], $p = .074$ | 0.027 [0.002, 0.057], $W = .273$ |
| Trait H | 0.007 [−0.009, 0.023], $p = .389$ | 0.018 [0.001, 0.041], $W = .547$ |
| Duty → self-negativity | | |
| Trait E | −0.008 [−0.027, 0.011], $p = .413$ | 0.035 [0.006, 0.065], $W = .124$ |
| Trait A | 0.001 [−0.019, 0.019], $p = .947$ | 0.032 [0.006, 0.058], $W = .161$ |
| Trait C | −0.020 [−0.039, 0.000], $p = .045$ | 0.036 [0.006, 0.065], $W = .152$ |
| Trait N | 0.010 [−0.006, 0.027], $p = .225$ | 0.020 [0.001, 0.045], $W = .474$ |
| Trait O | −0.003 [−0.021, 0.015], $p = .758$ | 0.023 [0.001, 0.057], $W = .683$ |
| Trait H | −0.015 [−0.033, 0.002], $p = .082$ | 0.020 [0.001, 0.053], $W = .647$ |
| Intellect → self-negativity | | |
| Trait E | −0.009 [−0.025, 0.007], $p = .275$ | 0.008 [0.000, 0.027], $W = .715$ |
| Trait A | −0.011 [−0.029, 0.007], $p = .234$ | 0.030 [0.003, 0.057], $W = .313$ |
| Trait C | −0.026 [−0.041, −0.010], $p = .001$ | 0.010 [0.000, 0.032], $W = .599$ |
| Trait N | 0.008 [−0.007, 0.024], $p = .297$ | 0.012 [0.001, 0.035], $W = .667$ |
| Trait O | −0.009 [−0.026, 0.009], $p = .308$ | 0.016 [0.001, 0.051], $W = .742$ |
| Trait H | −0.007 [−0.023, 0.010], $p = .433$ | 0.015 [0.001, 0.044], $W = .681$ |
| Adversity → self-negativity | | |
| Trait E | −0.015 [−0.031, 0.001], $p = .073$ | 0.010 [0.000, 0.034], $W = .694$ |
| Trait A | −0.013 [−0.029, 0.004], $p = .140$ | 0.017 [0.001, 0.041], $W = .569$ |
| Trait C | −0.014 [−0.031, 0.002], $p = .080$ | 0.012 [0.001, 0.037], $W = .758$ |
| Trait N[a] | **0.029 [0.013, 0.045], $p < .001$** | 0.013 [0.001, 0.038], $W = .850$ |
| Trait O | 0.007 [−0.011, 0.024], $p = .442$ | 0.023 [0.001, 0.056], $W = .779$ |
| Trait H | −0.007 [−0.024, 0.010], $p = .423$ | 0.017 [0.001, 0.048], $W = .741$ |
| Mating → self-negativity | | |
| Trait E | −0.007 [−0.025, 0.010], $p = .406$ | 0.024 [0.002, 0.052], $W = .714$ |
| Trait A | 0.001 [−0.016, 0.020], $p = .875$ | 0.026 [0.002, 0.053], $W = .254$ |
| Trait C | 0.011 [−0.006, 0.029], $p = .195$ | 0.024 [0.002, 0.050], $W = .537$ |
| Trait N | 0.002 [−0.015, 0.019], $p = .784$ | 0.021 [0.002, 0.045], $W = .626$ |
| Trait O | −0.007 [−0.024, 0.011], $p = .460$ | 0.020 [0.001, 0.050], $W = .679$ |
| Trait H | 0.004 [−0.014, 0.021], $p = .657$ | 0.023 [0.002, 0.050], $W = .479$ |

(*table continues*)

**Table 8** (*continued*)

| S–B association<br>Trait moderator | Average interaction: *B* | Country differences: σ |
|---|---|---|
| pOsitivity → self-negativity | | |
| Trait E | 0.016 [−0.002, 0.034], $p = .072$ | 0.027 [0.002, 0.058], $W = .807$ |
| Trait A | −0.005 [−0.022, 0.011], $p = .552$ | 0.020 [0.002, 0.043], $W = .573$ |
| Trait C | 0.014 [−0.001, 0.030], $p = .074$ | 0.012 [0.001, 0.037], $W = .743$ |
| Trait N[a] | **−0.049 [−0.065, −0.032], $p < .001$** | 0.019 [0.001, 0.042], $W = .755$ |
| Trait O | −0.016 [−0.033, 0.000], $p = .055$ | 0.017 [0.001, 0.045], $W = .769$ |
| Trait H | 0.008 [−0.008, 0.025], $p = .306$ | 0.013 [0.001, 0.038], $W = .747$ |
| Negativity → self-negativity | | |
| Trait E | −0.020 [−0.036, −0.004], $p = .016$ | 0.016 [0.001, 0.044], $W = .719$ |
| Trait A | 0.010 [−0.006, 0.026], $p = .200$ | 0.009 [0.000, 0.029], $W = .714$ |
| Trait C | −0.013 [−0.029, 0.002], $p = .095$ | 0.011 [0.001, 0.035], $W = .748$ |
| Trait N[a] | **0.037 [0.021, 0.053], $p < .001$** | 0.013 [0.001, 0.039], $W = .766$ |
| Trait O | 0.021 [0.004, 0.037], $p = .015$ | 0.015 [0.001, 0.039], $W = .732$ |
| Trait H | 0.007 [−0.008, 0.023], $p = .350$ | 0.009 [0.000, 0.031], $W = .689$ |
| Sociality → self-negativity | | |
| Trait E | 0.000 [−0.018, 0.018], $p = .976$ | 0.029 [0.004, 0.056], $W = .244$ |
| Trait A | 0.000 [−0.016, 0.017], $p = .954$ | 0.018 [0.001, 0.048], $W = .731$ |
| Trait C | −0.001 [−0.019, 0.018], $p = .948$ | 0.032 [0.003, 0.061], $W = .475$ |
| Trait N | −0.012 [−0.030, 0.006], $p = .199$ | 0.026 [0.002, 0.056], $W = .684$ |
| Trait O | −0.011 [−0.028, 0.007], $p = .218$ | 0.017 [0.001, 0.050], $W = .793$ |
| Trait H | −0.002 [−0.019, 0.014], $p = .773$ | 0.012 [0.001, 0.039], $W = .731$ |
| ES average | 0.011 (0.008) [−0.049, 0.037] | 0.019 (0.009) [0.007, 0.049] |
| ES expected | 0.020 (0.015) [−0.049, 0.037] | 0.023 (0.014) [0.008, 0.047] |
| ES unexpected | 0.010 (0.007) [−0.029, 0.027] | 0.018 (0.008) [0.007, 0.049] |
| $W$ or $p < .001$ average | 3.17% (4/126) | 0.79% (1/126) |
| $W$ or $p < .001$ expected | 33.33% (3/9) | 0.00% (0/9) |
| $W$ or $p < .001$ unexpected | 0.85% (1/117) | 0.85% (1/117) |
| $W$ or $p < .05$ average | 18.25% (23/126) | 2.38% (3/126) |
| $W$ or $p < .05$ expected | 44.44% (4/9) | 11.11% (1/9) |
| $W$ or $p < .05$ unexpected | 16.24% (19/117) | 1.71% (2/117) |

*Note*. Estimates are shown together with 95% credible intervals. Averages are shown in the format mean (standard deviation) [minimum, maximum], with mean and standard deviation based on absolute values. Rates of statistical significance and fit improvement are shown as percentages and ratios. Sample sizes ranged from 15,194 to 15,201 participants (*Mdn* = 15,197) from 62 countries; see our Open Science Framework project for details at https://osf.io/c4emf. Estimates with $p < .001$ or $W < .001$ are presented in bold. S–B = situation characteristic–behavioral state; Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism; Trait O = Openness; Trait H = Honesty-Humility; *B* = fixed effect representing the average interaction effect; σ = random slope standard deviation representing country differences in the interaction; *W* = WAIC weight of the random intercept-only model representing fit improvement when modeling the random slope; ES = effect size.
[a] Expected interaction.

Conscientiousness was associated with a more positive association between situational Duty and Agency ($B = .018$, $p = .019$). We did not find evidence for the other hypothesized P × S effects, predominantly involving interactions between trait Extraversion and situation characteristics in the prediction of Enthusiasm.

Regarding cross-country differences in P × S interactions, we found little evidence for fit improvement when modeling random slopes of interaction effects across countries (only in one of 126 [0.79%] cases). The standard deviation of the interaction effects across countries was also small with $\overline{\sigma} = .023$ (expected effects) and $\overline{\sigma} = .018$ (unexpected effects).[21]

## Further Results

### *Correlations Among Different Association Types*

First, similar to the analyses examining correlations between country averages in associations and country-level variables, we investigated correlations between country averages in different types of associations (see additional online Table S27 at https://osf.io/c4emf/files/ukqd7). S–B associations and P–B associations were not consistently significantly related. Thus, countries with stronger situation characteristic effects on behavioral states did not have weaker trait effects on behavioral states in general—an insight that will be further differentiated later on. This pattern was similar for S–B and P–S associations, which were unrelated across countries. In contrast, we did observe relatively consistent positive associations between P–B and P–S associations: In countries with stronger effects of personality traits on behavioral states, personality traits also had stronger effects on situation characteristics. For instance, for regression coefficients,[22] the association across countries was $r = .463$, $p < .001$.

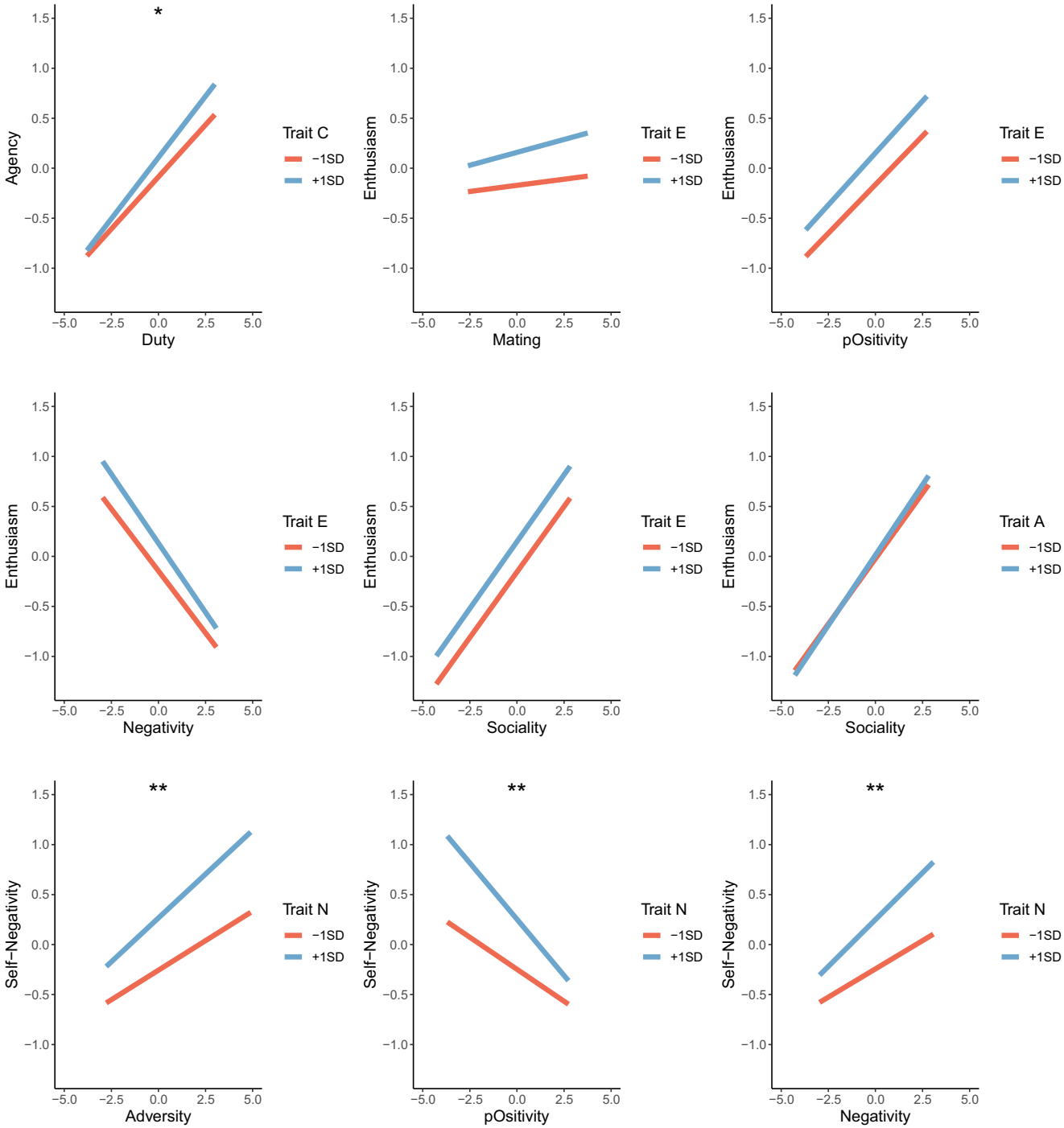
Second, we further zoomed in on links between S–B and P–B associations by running multilevel models with single situation characteristics and traits in the simultaneous prediction of a given

[21] Given the comparatively low rate of statistically significant average P × S interactions and country differences in these interactions, as well as the high complexity of and likely low power for three-level interactions, no further moderation effects by country-level variables were examined. This is congruent with the preregistered analysis strategy.

[22] Keyed in the direction of the average effect and based on separate linear regressions for each country.

**Figure 7**

*Expected Personality Trait × Situation Characteristic Interactions in the Prediction of Behavioral States*




*Note*. Shown are expected Personality Trait × Situation Characteristic interactions in the prediction of behavioral states. Trait E = Extraversion; Trait A = Agreeableness; Trait C = Conscientiousness; Trait N = Neuroticism. See the online article for the color version of this figure.
* $p < .05$. ** $p < .001$.

behavioral state. We focused on random slope correlations to examine how country-specific effects of traits and situation characteristics were associated for specific variable combinations (see additional online Table S28 at https://osf.io/c4emf/files/ukqd7). Only some correlations were statistically significant (four of 126 [3.17%] at $\alpha = .001$, 26 of 126 [20.63%] at $\alpha = .05$). When focusing on the broad pattern of results at $\alpha = .05$, we found many random slope correlations indicating negative associations between country-specific

S–B and P–B associations for Agency, but this was limited to Extraversion, Conscientiousness, Neuroticism, and Openness, whereas effects for Agreeableness (and to a lesser extent Honesty-Humility) were reversed.[23] Moreover, effects of some situation characteristics on Enthusiasm were stronger in countries with stronger effects of Agreeableness on Enthusiasm. We observed no consistent relations for combinations of Enthusiasm with other traits or for Self-Negativity. Overall, the findings highlight some variable specificity in associations between country-specific trait effects and situation characteristic effects on behavioral states.

### *Single-Item Analyses for Behavioral States and Situation Characteristics*

Results based on single behavioral state and situation characteristic items[24] can be found in additional online Tables S18–S23 (https://osf.io/c4emf/files/ukqd7). Regarding average associations and country differences in these associations, the pattern of results was similar to the main analyses, although effect sizes tended to be somewhat smaller.[25] For instance, "A job needs to be done" (situation characteristic) was associated with "I displayed ambition" (behavioral state), $B = .121$, $p < .001$, $\sigma = .063$; Extraversion (trait) was associated with "I displayed ambition" (behavioral state), $B = .133$, $p < .001$, $\sigma = .058$; and Conscientiousness (trait) was associated with "A job needs to be done" (situation characteristic), $B = .031$, $p < .001$, $\sigma = .011$.

We again observed small but some statistically significant interaction effects with country-level variables, especially for S–B and P–B associations, with rates of statistical significance for single-item analyses being somewhat lower than in the main analyses.[26] When only focusing on country-level variables that moderated at least 10% of all associations in the same direction at $\alpha = .05$, we observed the following pattern: (a) Several S–B associations were stronger in countries characterized by higher harmony, affective autonomy, intellectual autonomy, egalitarianism, and national socioeconomic status and weaker in countries characterized by higher embeddedness, hierarchy, collectivism, and independent happiness; (b) several P–B associations were stronger in countries characterized by higher embeddedness, hierarchy, mastery, collectivism, and independent happiness and weaker in countries characterized by higher harmony, affective autonomy, intellectual autonomy, egalitarianism, self-expression, and national socioeconomic status; and (c) several P–S associations were stronger in countries characterized by higher hierarchy and collectivism and weaker in countries characterized by higher egalitarianism. While not identical, this general pattern of results was similar to the main analyses, also concerning the opposite direction of various findings as compared to our hypotheses. For instance, the association between "A job needs to be done" (situation characteristic) and "I concentrated on or worked at a hard task" (behavioral state) was weaker in countries characterized by higher embeddedness and collectivism ($B = -.064$ and $B = -.060$, respectively; $p$s $< .001$). In turn, the effect of trait Conscientiousness (trait) on "I concentrated on or worked at a hard task" (behavioral state) was stronger in embedded and collectivistic countries ($B = .041$ and $B = .041$, respectively; $p$s $< .001$). Finally, we again found several statistically significant and sizable associations between P–B associations and country averages in the behavioral state (random slope–random intercept correlations), especially for Agency items. Overall, the single-item analyses thus support the robustness of our main findings.

### *Different Collectivism Measures*

For the main analyses, we used a novel measure of collectivism focusing on responsibilities toward close others ("responsibilism"; Talhelm, 2021). To examine robustness, we repeated our analyses with two alternative collectivism measures: (a) the classical individualism dimension from Hofstede (reversed; Hofstede et al., 2010) and (b) the novel global collectivism index from Pelham et al. (2022). The measures were highly intercorrelated across countries ($r_{\text{responsibilism,Hofstede}} = .689$, $r_{\text{responsibilism,Pelham}} = .761$, $r_{\text{Hofstede,Pelham}} = .740$). Detailed results are presented in additional online Tables S29–S32 (https://osf.io/c4emf/files/ukqd7). Broadly, while effect sizes and statistical significance sometimes differed, the pattern of results showed many similarities.[27] Thus, as is to be expected, generalization across different collectivism measures was not perfect, but several patterns of findings were highly similar and

[23] For Agreeableness, it needs to be emphasized that the average association with Agency was small and negative ($B = -.037$, $p = .002$), whereas the variation in this link across countries was comparatively large, with $\sigma = .058$. Our results imply that in countries where effects of trait Agreeableness on Agency were stronger (i.e., more negative), some situation characteristic effects tended to be stronger as well—in turn, effects of these situation characteristics would be weaker in countries characterized by more positive effects of Agreeableness on Agency.

[24] Traits were still scale scores and not single items.

[25] We observed the following results: (a) S–B associations—single item: $\overline{|B|} = .074$ (69.93% significant at $\alpha = .001$) and $\overline{\sigma} = .045$ (45.65% fit improvement) versus original analyses: $\overline{|B|} = .127$ (80.95% significant) and $\overline{\sigma} = .059$ (71.43% fit improvement); (b) P–B associations—single item: $\overline{|B|} = .074$ (75.00% significant) and $\overline{\sigma} = .045$ (47.22% fit improvement) versus original analyses: $\overline{|B|} = .099$ (83.33% significant) and $\overline{\sigma} = .046$ (44.44% fit improvement); (c) P–S associations—single item: $\overline{|B|} = .034$ (52.17% significant) and $\overline{\sigma} = .020$ (0.72% fit improvement) versus original analyses: $\overline{|B|} = .046$ (59.52% significant) and $\overline{\sigma} = .024$ (2.38% fit improvement).

[26] We observed the following results: (a) S–B associations—single item: $\overline{|B|} = .014$ (5.39% and 20.60% significant at $\alpha = .001$ and .05, respectively) versus original analyses: $\overline{|B|} = .018$ (6.98% and 30.79% significant at $\alpha = .001$ and .05, respectively); (b) P–B associations—single item: $\overline{|B|} = .013$ (3.24% and 20.74% significant at $\alpha = .001$ and .05, respectively) versus original analyses: $\overline{|B|} = .014$ (4.44% and 25.93% significant at $\alpha = .001$ and .05, respectively); (c) P–S associations—single item: $\overline{|B|} = .009$ (0.58% and 8.99% significant at $\alpha = .001$ and .05, respectively) versus original analyses: $\overline{|B|} = .010$ (0.79% and 13.65% significant at $\alpha = .001$ and .05, respectively).

[27] Applying the same interpretation criteria as for the main analyses, we observed the following results. For S–B associations, the Pelham measure also indicated weaker associations in collectivistic countries, with even more pronounced effects than for responsibilism (main analyses). This finding was not observed with sufficient consistency for the Hofstede measure—but it should be kept in mind that this measure had data available for the lowest number of countries ($N = 52$). For P–B associations, contrary to responsibilism, the other collectivism measures indicated stronger trait effects in collectivistic countries when examining moderation effects, which was confirmed for the Pelham measure when examining correlations with average P–B associations. This is in line with findings of stronger P–B associations for countries higher in embeddedness and lower in intellectual autonomy. Correlations with average P–B associations were similar for the responsibilism and Hofstede measures, but not consistent enough to meet our criteria for interpretation. For P–S associations, the responsibilism measure indicated stronger associations when focusing on moderation effects, as did the Pelham measure. For correlations with average P–S associations, in contrast, only the Hofstede measure related (sufficiently consistently) to stronger associations, although findings for the other measures were again similar. Thus, there was some, albeit inconsistent, evidence for a link between collectivism and stronger P–S associations. This should be interpreted with some caution given the exploratory nature of these analyses and little evidence for country differences in P–S associations.

replicated across (at least some) of the different collectivism measures.

## Discussion

The present study provides an overview of relations between elements of the Personality Triad (persons, situations, behavior) across 61 countries and one geographic region. We found sizable average S–B and P–B associations, with a relatively high degree of generalization across countries but also noteworthy country differences. We also observed meaningful P–S associations, but these tended to be smaller in magnitude than the other two types of associations. Moreover, we found little evidence for country differences in P–S associations. Crucially, going beyond work only focusing on country differences, we also examined country-level variables that could contribute to such differences (e.g., cultural dimensions such as collectivism). Regarding these moderation effects, patterns for S–B and P–B associations tended to be in the opposite direction of theoretical expectations (e.g., we observed weaker S–B associations in countries high in embeddedness and collectivism as well as stronger P–B associations in countries high in embeddedness).

Finally, we observed relatively few statistically significant and generally small P × S interactions, although multiple expected effects indicating stress reactivity were statistically significant. We found little evidence for country differences in P × S interactions. An overview of our main findings can be found in Table 9. In the following, we will discuss the interpretation of our findings separately for each of the four research questions.

### RQ1: Situation Characteristic–Behavioral State (S–B) Associations Across Countries

We observed sizable average associations between situation characteristics and self-reported behavioral states, especially for theoretically expected variable combinations. This is in line with findings based on experience sampling data (e.g., Abrahams et al., 2021; Breil et al., 2019; Horstmann et al., 2021; Kuper et al., 2022; Sherman et al., 2015). The average magnitude of expected relations ($\overline{|B|} = .192$) is similar to average expected within-person associations between DIAMONDS situation characteristics and personality states across five studies in daily life ($\overline{|B|} = .174$; Kuper et al., 2022). Findings on sizable average S–B associations thus generalize beyond the Western context to a much more diverse sample comprised of people from a large number of countries across the entire world. These effects cannot be interpreted as causal given the correlational study design and are likely partly affected by the fact that both situation characteristics and behavioral states were self-reported (see the Strengths, Limitations, and Future Directions section). Nevertheless, they are also in line with results based on more controlled designs (e.g., using standardized situation stimuli; Kuper et al., 2024) and with the generally emphasized relevance of situational variables for behavior in various areas of psychology.

We found some variation in S–B associations across countries, with standard deviations having approximately one third of the magnitude of the average effect for expected associations. This pattern is generally in line with the broad prediction of several theoretical approaches that situation effects on behavior should depend on culture (e.g., culture giving meaning to situational contexts, resulting in different expectations for behavior: Matsumoto, 2007; cultural differences in the strength of social norms resulting in a higher prevalence of stronger vs. weaker situations: Gelfand et al., 2011; cultural dimensions resulting in cultural differences in effects of contextual factors: Church, 2000). However, it should be noted that the observed variation across countries also implies a high degree of cross-cultural generalization (e.g., true country-specific effects in the opposite direction of the average effect should be extremely rare). In comparison, the variation of situation characteristic–state associations across individuals in everyday life (Kuper et al., 2022) is much higher, both compared to the average association and compared to the standard deviation across countries observed here. This is in line with the important recognition that variables typically vary (much) more within cultures than between cultures (e.g., Smith & Bond, 2019). Overall, we thus observed a high degree of similarity across cultures but also some notable differences in S–B associations.

Regarding links between country-level variables and the strength of S–B associations, our findings tended to contradict theoretical expectations. Effects of situation characteristics especially tended to be stronger in countries characterized by higher affective autonomy, intellectual autonomy, and national socioeconomic status, whereas they tended to be weaker in countries characterized by higher embeddedness, collectivism, independent happiness, and to some extent hierarchy. Thus, findings were in the opposite direction of our expectations (see Table 1) for collectivism, embeddedness, and hierarchy, whereas we found inconsistent or few effects for self-construal and tightness. This pattern generalized across various situation characteristics and behavioral states (Agency and Enthusiasm), as well as to analyses focusing on single situation characteristic and behavioral state items. Generally, these findings thus do not support predictions concerning cultural dimensions, such as the prediction that situational effects should be stronger in collectivistic (and relatedly embedded) cultures and in those with attributes of more interdependent self-construal (Church, 2000; Markus & Kitayama, 1998; Triandis, 1995). Similarly, they did not support the prediction that situational effects should be stronger in countries characterized by higher cultural tightness given stronger norms and a higher prevalence of strong situations in such countries (Gelfand et al., 2011).

However, two caveats concerning the situational and behavioral measures need to be mentioned. First, we focused on broad perceptions of psychological situation characteristics (Rauthmann et al., 2014) and broad behavioral state dimensions rather than specifically on situational social norms and behavioral compliance with these social norms—an approach that would be ideal to test effects of cultural tightness in particular. However, the single-item analyses suggested, for instance, that the association between "A job needs to be done" (situation characteristic) and "I concentrated on or worked at a hard task" (behavioral state) also tended to be somewhat weaker in tight cultures ($B = -.035$, $p = .039$), highlighting some potential robustness to this concern.

Second, it has been suggested that cultural differences (e.g., depending on collectivism or self-construal) in situational effects should pertain to differences across social roles rather than to differences across situational contexts more broadly (e.g., T. English & Chen, 2007). While we did not assess social roles per se, for instance,

**Table 9**
*Overview of the Main Findings*

| Research question | Result | Interpretation |
|---|---|---|
| RQ1: Situation characteristic–behavioral state associations across countries | • Main effects: $\overline{\lvert B \rvert} = .192$, $p < .001$: 9/9 (expected) vs. $\overline{\lvert B \rvert} = .079$, $p < .001$: 8/12 (unexpected)<br>• Country differences: $\overline{\sigma} = .060$, $W < .001$: 6/9 (expected) vs. $\overline{\sigma} = .058$, $W < .001$: 9/12 (unexpected)<br>• Country-level moderators: $\overline{\lvert B \rvert} = .018$; significant at $p < .001$: 22/315; at $p < .05$: 97/315<br>• Stronger associations: affective autonomy, intellectual autonomy, national socioeconomic status<br>• Weaker associations: embeddedness, collectivism, independent happiness, and to some extent[a] hierarchy | • Situation characteristics and behavioral states associated in meaningful and expected ways across countries.<br>• High extent of cross-cultural generalization but also some nonnegligible country differences (though much lower than differences between persons from previous work).<br>• Moderation by country-level variables indicates complex patterns, not supporting theoretical expectations and even suggesting opposite patterns (e.g., opposite direction: embeddedness, collectivism, to some extent hierarchy). |
| RQ2: Personality trait–behavioral state (P–B) associations across countries | • Main effects: $\overline{\lvert B \rvert} = .142$, $p < .001$: 6/6 (expected) vs. $\overline{\lvert B \rvert} = .078$, $p < .001$: 9/12 (unexpected)<br>• Country differences: $\overline{\sigma} = .049$, $W < .001$: 4/6 (expected) vs. $\overline{\sigma} = .045$, $W < .001$: 4/12 (unexpected)<br>• Country-level moderators: $\overline{\lvert B \rvert} = .014$; significant at $p < .001$: 12/270; at $p < .05$: 70/270<br>• Stronger associations: embeddedness, independent happiness, interdependent happiness, and to some extent hierarchy and mastery<br>• Weaker associations: intellectual autonomy, national socioeconomic status, and to some extent egalitarianism<br>• Associations with intercept: effects of Extraversion, Agreeableness, Conscientiousness, and Neuroticism on Agency strongly linked to average Agency in country | • Personality traits and behavioral states associated in meaningful and expected ways across countries.<br>• High extent of cross-cultural generalization but also some nonnegligible country differences.<br>• Moderation by country-level variables indicates complex patterns, not supporting theoretical expectations and even suggesting opposite patterns (e.g., opposite direction: embeddedness, to some extent hierarchy).<br>• Patterns consistent with sociocultural norm perspective (Eck & Gebauer, 2022) at least for some variables. |
| RQ3: Personality trait–situation characteristic (P–S) associations across countries | • Main effects: $\overline{\lvert B \rvert} = .080$, $p < .001$: 12/12 (expected) vs. $\overline{\lvert B \rvert} = .033$, $p < .001$: 13/30 (unexpected)<br>• Country differences: $\overline{\sigma} = .024$, $W < .001$: 0/12 (expected) vs. $\overline{\sigma} = .024$, $W < .001$: 1/30 (unexpected)<br>• Country-level moderators: $\overline{\lvert B \rvert} = .010$; significant at $p < .001$: 5/630; at $p < .05$: 86/630<br>• Stronger associations (only consistent across analyses[b]): hierarchy<br>• Weaker associations (only consistent across analyses): harmony, egalitarianism<br>• Countries with stronger P–B associations show stronger P–S associations | • Personality traits and situation characteristics associated in expected ways, but effect sizes are much smaller than for the other two types of associations.<br>• Little evidence for country differences in P–S associations; existing differences could be too small to detect.<br>• Moderation by country-level variables indicates some complex patterns. |
| RQ4: Personality Trait × Situation Characteristic (P × S) interactions across countries | • Fixed effects: $\overline{\lvert B \rvert} = .020$, $p < .001$: 3/9 (expected) vs. $\overline{\lvert B \rvert} = .010$, $p < .001$: 1/117 (unexpected)<br>• Country differences: $\overline{\sigma} = .023$, $W < .001$: 0/9 (expected) vs. $\overline{\sigma} = .018$, $W < .001$: 1/117 (unexpected) | • Overall small and comparatively few statistically significant P × S interactions in the prediction of behavioral states, in line with previous work.<br>• Some expected statistically significant interactions involving trait Neuroticism, consistent with prior work on stress reactivity.<br>• Little evidence for country differences in interactions; existing differences could be too small to detect. |

*Note*. $W$ = WAIC weight of the random intercept-only model representing fit improvement when modeling the random slope.
[a] "To some extent" implies that patterns were only consistently evident for either specific interaction effects or correlations between averaged associations and country-level variables. [b] Only including patterns consistent across both types of analyses given the overall scarcity of moderation effects.

the Sociality item "The people who are present have close personal relationships with each other" also showed some weaker associations with behavioral state items in more collectivistic and embedded cultures. Furthermore, previous work with a relatively small number of countries generally did not find expected links between cultural variables (e.g., collectivism) and the strength of variability across different social roles (e.g., Church, Anderson-Harumi, et al., 2008; Church et al., 2013). Nevertheless, future work should target specific types of situational/behavioral constructs predicted by specific theoretical approaches, and examining the generalization of our findings to other variables will be a valuable next step. Moreover, the mechanisms underlying our findings are unclear and should be investigated in future work (i.e., why do stronger situation characteristic effects emerge in certain cultures?). In addition, alternative interpretations should be investigated and tested—for instance, it could be proposed that collectivistic cultures "attune" people to the importance of contextual factors such that they are better able to differentiate their own behavior and aspects of the situation in self-reports, potentially yielding the unexpected pattern we found. However, such post hoc interpretations are ultimately speculative and require different designs to be empirically tested. Overall, our findings do not support simple theoretical predictions suggesting that situational effects should generally be much stronger in certain (e.g., collectivistic) cultures.

## RQ2: Personality Trait–Behavioral State (P–B) Associations Across Countries

Personality traits and self-reported behavioral states were linked in expected ways. Thus, even behavioral states in a single situation showed meaningful associations with personality traits. This finding is in line with previous work on associations between traits and states (e.g., Finnigan & Vazire, 2018; Fleeson & Gallagher, 2009; Ringwald et al., 2022; Sherman et al., 2015). With $\overline{|B|} = .142$, the average effect size for expected associations was slightly smaller than in previous work (e.g., $r$ around .19 for single states; Kuper et al., 2022; Matz & Harari, 2021).[28] However, it should be noted that the self-reported trait and behavioral state measures were less symmetric in this study than in work associating Big Five traits with Big Five states, potentially attenuating effects slightly. In sum, we found evidence for P–B associations in a more culturally diverse sample, in line with previous work focusing on fewer cross-cultural comparisons (e.g., Ching et al., 2013, 2014; Church et al., 2007; Church, Katigbak, et al., 2008). One caveat is the fact that both personality traits and behavioral states were assessed using self-reports, which can inflate associations (see the Strengths, Limitations, and Future Directions section). However, prior work similarly found P–B associations using behavioral observation in the laboratory (e.g., Back et al., 2009; Breil et al., 2021; Fetvadjiev et al., 2018), highlighting that effects are not fully attributable to this concern.

We also observed some country differences in P–B associations, with the standard deviation across countries being around one third the size of the average effect for expected associations. This pattern is in line with theoretical approaches predicting cultural differences in links between traits and behaviors or outcomes generally (e.g., person–culture match: Fulmer et al., 2010; sociocultural norm perspective: Eck & Gebauer, 2022; integrated cultural trait psychology approach: Church, 2000, 2009). Nevertheless, there was again a high degree of generalization across countries.

Associations between cultural differences in P–B associations and country-level variables contradicted our expectations. Overall, we found stronger P–B associations in countries characterized by higher embeddedness, independent and interdependent happiness, and (to some extent) hierarchy and mastery, whereas effects were weaker in countries characterized by higher intellectual autonomy and national socioeconomic status and to some extent egalitarianism. Thus, we observed cultural moderation effects in the opposite direction of our predictions for embeddedness and to some extent hierarchy, whereas there were inconsistent or few effects for collectivism, tightness, and self-construal. This general pattern of results was similar in the single-item analyses. However, there might be some variable specificity (e.g., effects of embeddedness, autonomy, and the national socioeconomic status were most pronounced for Agency). The results do not support most theoretical predictions concerning cultural differences in P–B associations such as the expectation of stronger predictability of behavior from traits in individualistic cultures (which are characterized by higher autonomy) and in cultures with attributes of more independent self-construal (Church, 2000; Markus & Kitayama, 1998; Triandis, 1995). Similarly, they do not support the prediction that trait effects should be attenuated due to the higher prevalence of strong situations in cultures characterized by higher tightness (Gelfand et al., 2011). Overall, this is in line with previous work across relatively small numbers of countries or ethnicities also finding inconsistent support for predicted moderations through cultural variables (e.g., Ching et al., 2013, 2014; Church, Katigbak, et al., 2008; Fetvadjiev et al., 2018).

Despite not supporting these broad predictions about which cultures should show stronger trait effects in general, some of our findings are in line with the sociocultural norm perspective (Eck & Gebauer, 2022; earlier sociocultural motives perspective: Gebauer et al., 2014). Sociocultural norm perspective predicts a trait-specific pattern: Agreeableness, Extraversion, and Conscientiousness should be more positively linked to socioculturally normative outcomes, whereas Openness should be more negatively (or less positively) linked to socioculturally normative outcomes. Relevant underlying mechanisms are proposed to be social trust (Agreeableness), social attention (Extraversion), rational thought (Conscientiousness), and independent thought (Openness; Eck & Gebauer, 2022). This prediction was partly supported when treating country averages in behavioral states as a reflection of sociocultural norms concerning this behavioral state. Specifically, Extraversion and Conscientiousness were more positively and Agreeableness less negatively linked to Agency in countries with higher means in Agency. This could potentially also account for various findings concerning cultural dimensions, which were often particularly pronounced for Agency. For instance, trait effects were stronger in countries with higher embeddedness, lower intellectual autonomy, and a lower national

[28] This estimate is based on convergent trait–state associations in the eight data sets reported in Kuper et al. (2022) as well as Matz and Harari (2021), with an overall sample size over 3,000. It is somewhat smaller than average single state–trait correlations reported across a number of samples (overall $N = 495$) by Fleeson and Gallagher (2009), yielding $r = .29$. However, a recent large-scale meta-analysis in preparation similarly indicates smaller average true correlations (Horstmann & Rauthmann, 2024).

socioeconomic status, and these country-level variables were all also associated with higher Agency (see additional online Table S11 at https://osf.io/c4emf/files/ukqd7). However, the sociocultural norm perspective was not fully supported—for instance, we also observed that Neuroticism was more negatively linked to Agency in countries with higher average Agency. Moreover, the effect for Openness was descriptively in the wrong direction (i.e., $r = .402$, $p = .050$). In addition, effects were restricted to Agency and not evident for Enthusiasm and Self-Negativity. Nevertheless, these findings highlight the more general point that cultural differences in P–B associations potentially depend on the specific trait and behavioral state variables involved and that corresponding cultural variables (e.g., social norms for specific behaviors; see also the discussion of S–B associations previously) should be assessed. Overall, our findings do not confirm predictions that effects of personality traits on behavioral states should generally be much stronger in certain (e.g., individualistic) cultures and instead highlight a high extent of cross-cultural generalization and nuanced patterns of cultural differences.

## RQ3: Personality Trait–Situation Characteristic (P–S) Associations Across Countries

We found multiple statistically significant associations between personality traits and situation characteristics. These associations were generally conceptually sensible and in expected directions. However, P–S associations tended to be considerably smaller in magnitude than the previous two associations among elements of the Personality Triad (e.g., around half the size for expected associations). Our findings are in line with prior work finding statistically significant P–S associations (e.g., Hong et al., 2020; Kritzler et al., 2020; Rauthmann, Sherman, Nave, & Funder, 2015; Sherman et al., 2015). Moreover, they are in line with prior work indicating somewhat smaller links between traits and situation characteristics than between traits and psychological states (e.g., Abrahams et al., 2021; Horstmann et al., 2021). This is corroborated by analyses of data reported in Kuper et al. (2022): Across five studies from everyday life, expected links between personality traits and states were more than twice as large as expected links between personality traits and situation characteristics. Notably, this holds true both on the level of a single situation (as here) and when examining person means in situation characteristics or states. Thus, personality traits may manifest more strongly in people's (behavioral) states than in the situations they experience (despite person → situation transactions; Rauthmann, 2021b). A contributing methodological factor may be the higher symmetry between personality traits and state measures, as compared to between personality traits and situation characteristics, although this pertains more to previous work using Big Five states than to our behavioral state measures. In addition, traits and behavioral states were both assessed using rating scales here, whereas situation characteristics were based on the Q-sort method.

Two potential phenomena underlying P–S associations are situation contact (e.g., depending on their traits, people select or evoke actually different types of situations) and situation construal (i.e., depending on their traits, people subjectively perceive the same situation differently; Rauthmann, Sherman, Nave, & Funder, 2015). Given that only self-report data on situation characteristics were available, construal and contact could not be distinguished here, which would require different study designs. Previous work suggests that trait–construal associations may be more pronounced than trait–contact associations (e.g., Abrahams et al., 2021; Hong et al., 2020; see also discussion by Rauthmann, 2021b), although more work on this topic using suitable designs is necessary. Both personality-dependent situation contact and situation construal could partly underlie effects of personality traits on behavior (e.g., selecting or construing situations in line with one's personality may facilitate personality-congruent behavior). Given the smaller magnitude of P–S associations, however, this is most likely only one (here small) contributing factor to P–B associations. It should further be noted that the choice of situation to report on (recalling one situation from the previous day one remembers well) could also be affected by personality traits (see the Strengths, Limitations, and Future Directions section). However, given previous work similarly finding P–S associations, this can likely not fully account for the findings.

We found little evidence for substantial country differences in P–S associations, with standard deviations across countries being small. However, the magnitude of variation across countries compared to the average effect was comparable to S–B and P–B associations. Thus, there may be similar (compared to the average effect) true country differences in P–S associations that are difficult to detect but may lead to fit improvement in even larger samples with an even higher number of countries. Regarding moderation by country-level predictors, interaction effects tended to be quite small and were comparatively rarely statistically significant. Across analyses, lower harmony, lower egalitarianism, and higher hierarchy emerged as predictors of stronger P–S associations. Moreover, we generally found that in countries with stronger P–B associations, P–S associations also tended to be stronger. This is conceptually sensible from the perspective of situation contact since personality trait → situation characteristic transactions would be partly behaviorally mediated (e.g., via maintenance, selection, modulation, and creation mechanisms; Rauthmann, 2021b). Thus, in cultural contexts facilitating more trait manifestation in behavior, behavioral person → situation transactions may be more pronounced as well. Similarly, in cultures with more person → situation transactions, the situations people find themselves in may be more likely to facilitate trait-congruent behavioral states (although this might only be a small contributing factor; see previously). Alternatively, the positive association could reflect country differences in personality-dependent construal of both one's situations and one's own behavior. In sum, while we had no hypotheses concerning the pattern of country differences in P–S associations, we found some potentially unexpected correlations (e.g., weaker associations in more egalitarian countries), and P–S associations tended to be stronger in countries with stronger P–B associations. Nevertheless, these findings need to be interpreted with some caution given the typically small magnitude of cross-country variation in P–S associations.

## RQ4: Personality Trait × Situation Characteristic (P × S) Interactions Across Countries

On average, P × S interactions were less often statistically significant than associations among elements of the Personality Triad, despite somewhat exceeding chance level (especially for expected effects). Moreover, effect sizes tended to be small. Overall, this pattern is in line with previous work finding few or only some

statistically significant but small specific P × S interaction effects in the prediction of states (e.g., Abrahams et al., 2021; Kuper et al., 2022; Kuper et al., 2024; Quintus et al., 2021; Sherman et al., 2015). Three hypothesized interaction effects were statistically significant at $\alpha = .001$: Neuroticism was linked to stronger associations of situational Adversity, (lower) pOsitivity, and Negativity with Self-Negativity. This is congruent with literature on stress reactivity and Neuroticism, which finds relatively consistent associations (e.g., Bolger & Schilling, 1991; Hisler et al., 2020; Wrzus et al., 2021). However, with the DIAMONDS, such stress reactivity effects do not always emerge (e.g., Kuper et al., 2022; Kuper et al., 2024; cf. Quintus et al., 2021). Various other predicted interaction effects, especially those involving trait Extraversion in the prediction of Enthusiasm, tended not to be statistically significant, which is in line with other work suggesting that different types of reactivities are often not moderated by Extraversion (e.g., Kroencke et al., 2023; Kuper et al., 2022; Lucas et al., 2008; Smillie et al., 2013; cf. Breil et al., 2019; Kuper et al., 2024).

We observed very few country differences in P × S interactions. This does not imply that such country differences in interaction effects do not exist, but they may be so small that they are not detectable even in this large sample across a relatively high number of countries. Thus, we did not provide evidence for the Culture × Person × Situation approach (Leung & Cohen, 2011), which predicts cultural differences in Person × Situation interactions. That being said, the variables for which this approach would predict interaction effects may be more specific (e.g., honor culture, personal endorsement of honor violence, having a favor to repay, helping behavior) than the broad variables examined here. Moreover, the Culture × Person × Situation approach does not imply the ubiquity of such three-way interactions and acknowledges many commonalities across cultures (e.g., in main effects; Leung & Cohen, 2011). Instead, interactions involving particularly salient aspects of a given cultural dimension may be worth exploring in future work.

Importantly, Person × Situation interactions are not restricted to specific P × S interactions as examined here (although these represent the only type of Person × Situation interaction that could be examined in the present data). Kuper et al. (2024) proposed a framework distinguishing four types of interaction effects: (a) broad Person × Situation variance, (b) individual differences in situation variable–outcome associations (e.g., individual differences in situation characteristic–state contingencies; Kuper et al., 2022), (c) situational differences in person variable–outcome associations (e.g., situational differences in trait–behavior associations; Tett & Guterman, 2000), and (d) specific Person Variable × Situation Variable interactions (e.g., Trait × Situation Characteristic [here P × S] interactions). The empirical evidence for interaction effects is quite different across these four types of interactions. Interaction variance is often a (very) large variance component in outcomes of interest, and situation characteristic–state associations vary considerably across people. In contrast, situational differences in trait manifestation are often smaller, and especially, specific P × S interactions are frequently very small and inconsistent across studies (see a detailed discussion in Kuper et al., 2024). Thus, people generally differ in their reaction to situations, but especially the specific person variables (e.g., traits) involved in these interactions remain relatively unclear. Importantly, future work on the Personality Triad across cultures using different designs should examine additional, broader interaction types. For instance, rather than only testing country differences in average associations between two elements of the Personality Triad, country differences in the variation of these associations could be explored. Countries may differ in the strength of individual differences in S–B associations (e.g., stronger situations in tight cultures leading to less interindividual variation in situational contingencies or less interaction variance in general; Gelfand et al., 2011). Similarly, countries may differ in the strength of situational differences in P–B associations (e.g., stronger situational differences in trait manifestation depending on social roles in more interdependent, collectivistic cultures; Church, 2000; Markus & Kitayama, 1998). Overall, much remains to be learned about different types of Person × Situation interactions across cultures.

## Implications

Overall, what do our findings imply about the Personality Triad (Funder, 2006) across cultures? First, average S–B, P–B, and P–S associations appeared to generalize remarkably well across countries, with P–S associations being somewhat smaller than the other types of associations. In contrast, P × S interactions were less often statistically significant and small in size. Second, there were also nonnegligible cultural differences in S–B and P–B associations. Third, these cultural differences showed complex associations with country-level predictors that often contradicted simple theoretical expectations (e.g., we observed weaker situation characteristic effects in collectivistic cultures and stronger trait effects in cultures with higher embeddedness). Finally, countries with larger P–B associations also appeared to show larger P–S associations. In contrast, general negative associations between P–B and S–B associations (reminiscent of false dichotomies in the person–situation debate) were not consistently supported (only with respect to some traits for Agency). While these findings provide an informative overview of the Personality Triad across countries, replications and extensions based on other study designs would be pertinent (e.g., using intensive longitudinal designs rather than just one situation per participant, using designs facilitating causal inference; see below).

Our findings on high cross-cultural similarity support similar prior conclusions concerning single elements of the Personality Triad (e.g., behavioral states: Baranski et al., 2017; situation characteristics: Guillaume et al., 2016; Lee et al., 2020) and concerning relations between elements of the Personality Triad across smaller numbers of countries (e.g., Ching et al., 2013; Church et al., 2013; Church, Katigbak, et al., 2008; for an overview of trait effects across cultures, see Church & Katigbak, 2017). The observed pattern of cultural differences suggests that simple expectations concerning stronger trait effects or situational effects in certain types of cultures (e.g., depending on collectivism, self-construal, tightness; Church, 2000, 2009) are unlikely to be correct, which broadly supports prior work with relatively few countries. Note, however, that the sociocultural norm perspective (Eck & Gebauer, 2022) received some support (although not consistently across all variables). In general, the complex pattern of findings, inconsistent with simple theoretical expectations, suggests that cultural differences are relatively nuanced. This reinforces abundant calls to move beyond simple dichotomies when examining culture (e.g., Kitayama & Salvador, 2024; Miller, 2002; Vignoles et al., 2016).

Further, while our findings suggest some generalization across variables, they also imply that more variable-specific portrayals of cultural differences could be valuable. Our results suggest that

cultural moderation effects of S–B associations are similar across several cultural variables and different (but not all) situation characteristics. Moderation effects generalized across the two behavioral states Agency and Enthusiasm (see Table 3), which can be mapped onto the interpersonal circumplex (Wiggins, 1979) and both reflect behavioral content related to extraverted behavior (DeYoung et al., 2013). In contrast, findings did not generalize to Self-Negativity. For cultural moderation of P–B associations, findings generalized across multiple cultural variables and different (but not all) traits. Generalization across different behavioral states was weaker—findings were most pronounced for Agency rather than Enthusiasm or Self-Negativity (except for country-level happiness, which predominantly moderated effects on Self-Negativity; see Table 5). Our work gives a broad overview of cultural differences in relations among all elements of the Personality Triad across various variables each. It thus lays the groundwork for important future work that can focus on more detailed investigations tailored specifically to certain relations and variables. Such work could also examine additional, more specific variable types (e.g., particularly relevant social norms rather than broad situation characteristics). Research on the Personality Triad across cultures is still in its infancy. Future endeavors in this area will be highly valuable and necessary for a more comprehensive, generalizable, and process-based understanding of personality, as well as for a fuller and more nuanced understanding of cultural effects on psychological dynamics.

Notably, the findings presented here as well as future work on the Personality Triad across cultures are not just theoretically informative for basic psychological research but also relevant for future applications. For instance, links between aspects of situations and behavior are highly relevant in the domain of clinical psychology (e.g., identifying maladaptive individual links and/or increasing the frequency of situations associated with beneficial behavioral states). Our findings on the relatively high generalization across countries provide some tentative evidence that intervention approaches based on such relations between elements of the Personality Triad might work at least similarly in different cultural contexts. Moreover, while cultural moderation effects yielded complex and unexpected patterns, the existence of some notable country differences reinforces the notion that tailoring such interventions to cultural contexts is valuable as well.

## Strengths, Limitations, and Future Directions

Our examination of the Personality Triad across cultures has several strengths, including (a) the integration of work on personality across cultures with work on personality dynamics; (b) the extensive and systematic examination of four different types of relations among elements of the Personality Triad across countries; (c) the analysis of various personality trait (6), situation characteristic (7), and behavioral state (3) variables (while distinguishing theoretically expected and unexpected variable combinations throughout); (d) the systematic exploration of a broad range of 15 country-level variables potentially contributing to the observed country differences (with much higher power than previous work); (e) the large number of participants ($N$ = 15,221); (f) the large number of countries (61 countries and one geographic region across six continents; in contrast to previous work focusing on relatively small numbers of countries); (g) the examination of the robustness of results across analysis approaches; and (h) the use of open science practices (preregistration; open sharing of materials, data, code, and output).

Despite these strengths, there are also notable limitations to our study, several of which pertain to potential constraints on generality (Simons et al., 2017) and point to fruitful directions for future research. First, some limitations concerning the sample need to be mentioned. The sample largely consisted of university/college students who might be more educated and have a higher socioeconomic status than more representative samples. Self-reported family socioeconomic status (1 = *least well off* to 10 = *most well off*) yielded an average value of $M = 6.16$ in our data. Notably, countries differed in this measure, and these differences were correlated substantially with national socioeconomic status ($r$ = .373, $p$ = .003). These data suggest that despite our sampling strategy focusing on university/college students, systematic country differences in socioeconomic status are still reflected in these particular samples. Moreover, individuals differed considerably in their subjective socioeconomic status within countries (see additional online Table S1 at https://osf.io/c4emf/files/ukqd7). That being said, country averages tended to be on the upper half of the scale (although it may not necessarily be interpretable in absolute terms), and the likelihood that individuals from our included samples are somewhat more educated and have a higher socioeconomic status than representative samples of the respective populations remains. Given that cultural influences exist at different levels of analysis, also within nations (e.g., pertaining to social class/socioeconomic status; Cohen, 2009), it could be speculated whether our nonrepresentative sampling may partly account for the unexpected findings concerning moderation effects by country-level variables. This could be the case, for instance, if the sampling strategy would have led to the overrepresentation of participants with more individualistic local cultural contexts in collectivistic countries, which could further lead to interesting contrast effects. However, it might be more plausible that this should attenuate theoretically expected cultural moderation effects rather than fully reversing them. Ultimately, future work is necessary to examine whether our observed country-level cultural differences generalize to different sampling strategies. A further limitation of our sample concerns the number of countries. While quite large for cross-cultural research (exceeding typical numbers of countries in work on the Personality Triad across cultures by far), country-level variation and associations are essentially based on analyses across $N = 62$ cases. Given the high level of aggregation across participants within a country, effect sizes such as correlations at the country level are higher than typical effect sizes in psychology (e.g., Funder & Ozer, 2019), which is also corroborated by several statistically significant effects observed in this work. Further, such sizable effects here translate to relatively small regression coefficients in multilevel models (e.g., interaction effects with country-level variables), for which our power analysis often indicated high power (see additional online Table S33 at https://osf.io/c4emf/files/ukqd7). Nevertheless, power may not be optimal for relatively smaller effects at the country level (e.g., cultural differences in P–S associations or in P × S interactions). Overall, future work should aim to collect more representative samples within cultures and attempt to sample an even higher number of cultures (which does not necessarily have to be restricted to the nation level; see previously).

Second, the employed study design has important limitations. In addition to the fact that the study was observational, such that causal conclusions are not possible, our design included only one situation per participant. Specifically, participants were asked to report on a single situation from the previous day which they could remember well. Thus, S–B associations are not pure estimates of within-person effects (Hamaker, 2012) and P × S interactions are not pure estimates of cross-level interactions (i.e., personality traits moderating within-person associations). That being said, situation characteristic reports contain considerably more within-person variance than between-person variance (Horstmann et al., 2021; Kuper et al., 2022; Sherman et al., 2015) such that also the relations estimated here should be most strongly influenced by within-person variation. For P–B and P–S associations, these concerns do not apply since personality trait measures are on the person level and can only predict between-person variance in the respective dependent variable. While the use of just one situation limits statistical power for these associations, this is partly compensated by the large number of participants here. One related concern that should be acknowledged concerns the sampling of situations. Situations people can remember well may differ from other situations (but see Guillaume et al., 2016; Lee et al., 2020, for similarities), and personality traits could potentially affect which situations people choose to report on (both in terms of the situation characteristics and their behavior enacted). That being said, several broad patterns of results in our study are similar to those from previous work using different designs where these concerns do not apply. For instance, several other studies have similarly reported sizable links between situation characteristics and psychological states (e.g., Horstmann et al., 2021; Kuper et al., 2022; Sherman et al., 2015) or between personality traits and psychological states (e.g., Fleeson & Gallagher, 2009; Sherman et al., 2015), with these associations being relatively similar in size, as here (e.g., Kuper et al., 2024). Further, the finding that effects of personality traits on states are larger than effects of traits on situation characteristics is corroborated by prior work (e.g., Abrahams et al., 2021; Horstmann et al., 2021; Kuper et al., 2022). Last, the finding of small and relatively rarely significant interaction effects is also in line with existing literature using other designs (e.g., Abrahams et al., 2021; Kuper et al., 2022; Kuper et al., 2024; Sherman et al., 2015). Overall, it cannot be ruled out that limitations of our design affect estimates of relations among elements of the Personality Triad as well as cultural differences therein, but the prior arguments suggest that large distortions are unlikely to have occurred. Nevertheless, future work using other sampling approaches (e.g., intensive longitudinal studies such as interval-contingent experience sampling; Horstmann, 2021) would be very valuable to replicate and extend our results, representing a key future direction. Such designs would further allow the examination of individual differences in S–B associations (Fleeson, 2007; Kuper et al., 2022) across cultures. If implemented as a measurement burst design, such work could even zoom in on developmental processes (e.g., to examine how the interplay between persons, situations, and behavior underlies personality development across cultures; Wrzus & Roberts, 2017). Our study also did not allow the differentiation of situation contact (i.e., people actually find themselves in different situations) and situation construal (i.e., people subjectively construe the same situations differently), which would require different designs (e.g., multirater designs) or different data sources (e.g., mobile sensing; Schoedel et al., 2023). Finally, even more controlled designs (e.g., standardized situation stimuli, laboratory observation, experiments) are necessary to examine all possible types of Person × Situation interaction effects proposed by Kuper et al. (2024) and to circumvent the correlational nature of data collected in daily life.

Third, one notable limitation pertains to measurement across countries and languages in this study. Our examination of the similarity of item correlations across countries using the approach from Gardiner et al. (2019) suggested high but not perfect similarity across countries. Similarly, more traditional measurement invariance analyses yielded a nuanced picture with some fit indices supporting metric invariance and others not at commonly applied thresholds. Such findings are in line with other cross-cultural comparisons of measurement (for a critical discussion, see Funder & Gardiner, 2024). Thus, it cannot be ruled out that different interpretations of (translations of) our measures may have partly affected our results. Nevertheless, it should be noted that we observed a high extent of generalization of relations among elements of the Personality Triad across countries despite potential measurement issues. Further, the pattern of cross-cultural differences we observed (e.g., regarding cultural moderation of S–B vs. P–B associations) was relatively consistent, rendering it unclear why this pattern would emerge on the basis of methodological artifacts. If theoretically predicted cultural differences would have strong, pervasive effects, it would be particularly unlikely that we find consistent patterns in the opposite direction due to measurement issues. Moreover, our results did not emerge simply because some multi-item scales did not "work" in certain countries since we observed similar findings in single-item analyses. For recent discussions about measurement invariance in cross-cultural work, see, for instance, Funder and Gardiner (2024), Meuleman et al. (2023), Robitzsch and Lüdtke (2023), and Welzel et al. (2023). Notably, one advantage of the used measures is that cultural differences in acquiescent response styles (Rammstedt et al., 2013) should not affect our results since the Q-sort data for situation characteristics and the reverse-coded items (half) from the BFI-2-based personality trait measures largely eliminate this potential issue.[29]

Fourth, additional limitations of the measures themselves should be noted. Whereas the situation characteristic and personality trait measures were based on taxonomies with relatively broad coverage of relevant dimensions, the behavioral state dimensions were more specific. In particular, Agency and Enthusiasm can be mapped onto the interpersonal circumplex (reflecting two correlated dimensions within this model, Wiggins, 1979) and Self-Negativity reflects a specific behavior related to an emotional instability factor also identified for interpersonal behavior (Breil et al., 2023; Leising & Bleidorn, 2011). Future work could aim to achieve a broader coverage of behavioral states—both in the interpersonal domain (e.g., assessing more axes of the interpersonal circumplex; including a broader emotional instability/behavioral nervousness measure) and beyond. For situation characteristics, it would be informative to examine the extent to which findings generalize to other situation characteristic taxonomies (e.g., Gerpott et al., 2018; Oreg et al., 2020; Parrigon et al., 2017; Ziegler et al., 2019). Similarly, it will be valuable to assess other types of situational variables of relevance to specific theoretical predictions (e.g., situational social norms when examining cultural tightness; Gelfand et al., 2006, 2011). In addition

[29] However, as in many psychological studies, potential effects of other response styles (e.g., extreme response style) cannot be fully ruled out here.

to the content covered, it should be noted that we used self-report measures for personality traits, situation characteristics, and behavioral states, which can inflate associations due to common-source variance. For behavioral states, the use of additional designs and data sources (e.g., mobile sensing: Harari et al., 2017; behavioral observation: Back et al., 2009) would be desirable. Regarding situation characteristics, the use of subjective self-report renders it difficult to differentiate person and situation variables (Rauthmann, Sherman, & Funder, 2015) as well as situation contact and situation construal (Rauthmann, Sherman, Nave, & Funder, 2015). This again highlights the need to employ complementary designs (e.g., standardized situation stimuli, multirater designs, laboratory designs) and data sources (e.g., [consensual] other ratings, mobile sensing). Last, one strength is the inclusion of both internally measured (i.e., in this sample) cultural variables (tightness, self-construal, independent and interdependent happiness) as well as cultural variables based on other sources (collectivism, cultural value orientations, national socioeconomic status). Nevertheless, limitations pertaining to our sample (see previously) could imply that country averages in internally assessed cultural variables may not be representative of the culture as a whole (although this also partly pertains to commonly used external measures; e.g., Schwartz, 2008). Notably, most correlations on the country level were sensible (see additional online Table S4 at https://osf.io/c4emf/files/ukqd7), although correlations between internally measured and externally assessed cultural variables were often not high, and some unexpected associations were found (e.g., with independent happiness). However, unexpected patterns concerning country averages in cultural dimensions are a common finding (Heine et al., 2002; Talhelm, 2019), and the combination of different information sources on cultural dimensions (e.g., internal and external measures as done here) can be helpful to examine generalizability. In the present data, for instance, cultural moderation effects were descriptively stronger for external as compared to internally assessed country-level variables.

Fifth, it should be noted that several effect sizes (e.g., moderation effects by cultural variables) were relatively small. To facilitate an interpretation of general patterns, we also considered findings that we observed across multiple variable combinations or analysis approaches at the more liberal $\alpha = .05$ level (although individual effects should only be interpreted as statistically significant at $\alpha = .001$). Thus, some caution is warranted especially in cases where rates of significance were lower (e.g., country-level moderators of P–S associations).

Sixth, by focusing on country differences, we explored only one part of culture, which also includes many other aspects (e.g., ethnicity, regions within countries, socioeconomic status, religion, and more; Cohen, 2009). Thus, future work may examine cultural differences between groups of individuals differentiated by factors other than nationality. Relatedly, it would be a fruitful endeavor to bridge the work presented here with recent work on regional differences in psychological characteristics (e.g., Ebert et al., 2022; Götz et al., 2020). Further, our investigation took an etic approach (Cheung et al., 2011) and most variables we examined were developed in Western contexts. One key advantage of this approach, which enabled the present analyses, is that the same variables are assessed across countries. This allows direct comparisons, provided that the measures function similarly in different countries (see discussion above). That being said, it comes at the downside of potentially not fully capturing culture-specific aspects of the Personality Triad. For instance, there may be situational aspects that are particularly salient and relevant to behavior in a specific cultural context that would not emerge in taxonomies of situation characteristics developed in typical Western samples. Such aspects could be captured through an emic approach using variables and measures developed in or tailored to a given cultural context (Cheung et al., 2011). This approach has the potential to yield a fuller understanding of the unique interplay between elements of the Personality Triad in a specific group of individuals (e.g., zooming in on personality expressions of racialized students; Chung et al., 2024). Such tailoring to specific groups comes at the downside of rendering cross-cultural comparisons more difficult, although bottom-up integration could be attempted. This trade-off is highly similar to the issue of tailoring variables and measures to specific persons versus applying standardized measures across persons in the context of idiographics and nomothetics (e.g., Kuper, Andresen, et al., 2025; Wright & Zimmermann, 2019). In each case, the optimal approach ultimately depends on the research question. Notably, etic and emic approaches can be considered complementary and their combination represents a valuable future direction (Cheung et al., 2011; e.g., Gardiner et al., 2020).

Future work on the Personality Triad across cultures will have to further integrate personality dynamics and work on personality across cultures, yielding a more comprehensive, process-based understanding of intra-individual, interindividual, and cross-cultural differences, as well as their complex interplay. To facilitate this, large collaborative efforts such as the International Situations Project (Lee et al., 2020) are necessary (see, e.g., Scharbert et al., 2023, for another recent example). Ideally, future work should (a) assess large numbers of participants, ideally sampled representatively for the population of interest; (b) examine differences between large numbers of cultural groups; (c) consider aspects of culture in addition to nationality; (d) integrate emic and etic approaches; (e) employ complementary study designs (e.g., [intensive] longitudinal designs, multirater designs, more controlled designs, experimental designs; ideally simultaneously in multimethod studies); (f) employ complementary data sources (e.g., self-report, behavioral observation, [consensual] other ratings of situations, more objective mobile sensing data; ideally simultaneously in multimethod studies); and (g) combine top-down approaches (e.g., measuring specific theoretically predicted variables) and bottom-up approaches (e.g., systematically exploring complex patterns in the data—as done here or with further methods such as machine learning).

## Conclusion

We examined the Personality Triad in a large sample of participants across 61 countries and one geographic region by analyzing the interplay between personality traits, situation characteristics, self-reported behavioral states, and various cultural variables. We observed a high extent of cross-cultural generalization for S–B, P–B, and P–S associations. Average S–B and P–B associations were more pronounced than P–S associations, whereas P × S interactions were small and less often statistically significant. Notably, we also found evidence for some cultural differences in S–B and P–B associations. Regarding links between these differences and cultural variables, we observed a complex pattern that often contradicted simple theoretical expectations (e.g., we found weaker situational effects in collectivistic cultures and stronger trait effects in cultures with higher embeddedness). These findings highlight that relations

between elements of the Personality Triad generalize remarkably well across cultures and that theoretical predictions concerning cultural differences in effects of personality traits or situation characteristics in general may be too simplistic. Our findings should be replicated and extended using different study designs (e.g., intensive longitudinal designs, causally informative designs) as well as complementary data sources across large numbers of cultural groups. Such future work on the Personality Triad across cultures promises to yield a more comprehensive understanding of both personality and culture.

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