



Independence of intellect and ego relates to increased subjective well-being and decreased psychopathology

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ABSTRACT

The link between intellectual humility and well-being, especially across multiple outcomes of mental health, remains mostly unexplored. Intellectual humility involves an accurate understanding of the limitations and imperfections of one's knowledge and cognitive capabilities during the acquisition of new information. Being intellectually humble enables individuals to not feel threatened in the face of disagreements and leads to an openness in learning about alternative viewpoints. We investigated the relationship between intellectual humility and well-being in an exploratory study and a pre-registered replication (total $N = 898$). Results indicated that intellectual humility relates to higher meaning in life and flourishing, and lower levels of anxiety, depression, and psychological distress. Independence of Intellect and Ego, a key component of intellectual humility that captures the healthy separation between one's cognitive abilities and identity, appears to be the primary driver of these associations. Finally, these associations were robust to controlling for other factors (such as trait levels of agreeableness and modesty), indicating a consistent association between specific components of intellectual humility and positive and negative mental health outcomes.

1. Introduction

Intellectual humility is often defined as recognition that one's own beliefs may be incorrect, awareness of the limitations associated with personal beliefs, and attentiveness in obtaining and reevaluating relevant information (Leary et al., 2017). While extant research has examined the influence of intellectual humility on perceptions of epistemic knowledge and curiosity, and a determination to seek truth in the face of polarizing spiritual, political, and philosophical beliefs, opinions, and ideas (Krumrei-Mancuso, 2017; Krumrei-Mancuso & Rouse, 2015), evidence on its influence on other domains of life has received less attention. Of particular importance is the need to document its potential influence on well-being, as the current world is bombarded with information from different sources requiring changes in opinion and acknowledgment of intellectual shortcomings. The current investigation seeks to address this gap by examining how intellectual humility and its facets relate to well-being.

1.1. Defining and measuring well-being

The American Psychological Association defines well-being as “a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life” (American Psychological Association, 2018). Given the dual-factor model of mental health, which focuses on a comprehensive understanding of mental health, we employed measures that differentiate between subjective well-being and psychopathology (Jankowski, Captari, & Sandage, 2021; Magalhães, 2024). Thus, for the purposes of this investigation, we employed a broad approach seeking to measure mental health through multiple indicators, including the presence of meaning in life, life satisfaction, and self-flourishing, but also by measuring psychopathology with measures such as symptoms of depression, anxiety, and psychological distress.

Outcomes that contribute to well-being positively such that they related to better mental health included the presence of meaning in life, life satisfaction, and self-flourishing. We define these measures as “positive” because past work considers meaning presence (Steger, Frazier, Oishi, & Kaler, 2006), life satisfaction (Diener, Emmons, Larsen,

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& Griffin, 1985), and self-flourishing (Diener et al., 2009) as important aspects of a fulfilling life (Li, Dou, & Liang, 2021; Malvaso & Kang, 2022; Portocarrero, Gonzalez, & Ekema-Agbaw, 2020; Suldo & Shaffer, 2008).

Additional measures included self-report scales of depression, anxiety and distress. We consider depressive (CESD-10; Andresen, Malmgren, Carter, & Patrick, 1994) and anxious (GAD-7; Spitzer, Kroenke, Williams, & Löwe, 2006) symptoms, as well as psychological distress (Kessler et al., 2002) as symptoms that characterize an increased prevalence of psychopathology, due to their association with worse outcomes for one's mental health. Further, extant research also links higher scores on these constructs with decreased happiness and worse mental health outcomes and coping mechanisms (Boreham & Schutte, 2023; Burnette, Knouse, Vavra, O'Boyle, & Brooks, 2020; Suldo & Shaffer, 2008).

1.2. Intellectual humility as a predictor of increased well-being

At the heart of intellectual humility resides the tendency to recognize that one does not hold all the answers, and that one is not infallible. It is because of this core feature that intellectual humility predicts openness to other people's views (Porter & Schumann, 2018), being more likely to engage in high-quality apologies (Ludwig, Schumann, & Porter, 2022), and to adopt a non-defensive orientation more broadly (Krumrei-Mancuso, 2017; Porter & Schumann, 2018). In fact intellectual humility is also not significantly correlated with the strength of one's political belief (Koetke & Schumann, 2024). Thus, at a first glance, given intellectual humility's capacity to push people toward accepting fallibility, we can hypothesize that this trait would lead them to avoid coming at odds with others in their lives and avoid stressors. Indeed, this is also supported when we dig deeper into the construct of intellectual humility and focus on its other characteristics.

Specifically, people with intellectual humility tend to be more open to criticism and thus experience less threats in their (moral) image. For instance, they do not engage in denial or distortion of evidence contradicting their own views (Bowes et al., 2022), and they are not defensive in the face of harsh criticism (Van Tongeren et al., 2016). Ultimately, we contend that much like general humility, which has been consistently found to relate to increased well-being (e.g., Howard & Van Zandt, 2020; Pletzer, Thielmann, & Zettler, 2024), intellectual humility could also exhibit similar associations because it allows individuals to not construe their self-image based on their intelligence and the need to be right, which in turn allows them to be more accepting of others and other opinions, and to not feel threatened when confronted with information contrasting their beliefs. Below, we dig deeper into this evidence, and highlight how findings from the study of intellectual humility also suggest a potential positive association with well-being.

There are several reasons why possessing intellectual humility could result in greater well-being. Generally speaking, intellectually humble individuals can communicate more effectively and, as a result, may be better able to maintain interpersonal relationships (Porter et al., 2022), a crucial predictor of well-being. Those who are intellectually humble may be more empathetic and understanding in their interactions with others (Krumrei-Mancuso, 2017). This increased empathy can lead to healthier and more meaningful relationships, as intellectually humble individuals become better listeners and more supportive friends and colleagues. Those with characteristics of intellectual humility are also more likely to experience higher levels of gratitude, which can lead to positive social interactions and prosocial outcomes (Krumrei-Mancuso, 2017). In an increasingly polarized world, being intellectually humble has positive effects at both personal and societal levels. From a societal perspective, intellectual humility fosters cohesion by decreasing group polarization and promoting harmonious intergroup relationships (Porter et al., 2022). As intellectually humble individuals engage in thoughtful decision-making and remain open to learning, they often find themselves handling challenges with greater emotional resilience, navigating life with a deeper sense of satisfaction, and encountering

fewer moments of distress (Porter et al., 2022).

Being open to new ideas and perspectives can decrease the pressure to always be right, which also plays a role in reducing stress and anxiety (Caselli & Machia, 2022). Acknowledging the boundaries of one's knowledge can help mitigate authoritarian (unquestioning obedience) and dogmatic tendencies (avoidance from accepting others' beliefs; Porter et al., 2022). When individuals acknowledge that it is acceptable not to have all the answers, they can allow themselves to feel more relaxed. Embracing intellectual humility thus fosters a mindset of continuous learning and personal growth (Porter, Schumann, Selmeczy, & Trzesniewski, 2020). This can enhance self-esteem and a sense of personal fulfillment, as one recognizes their capacity to grow and improve over time. Mastery behaviors (defined as pursuing challenges and having resilience in the face of setbacks) are known to advance learning and are seen at a higher rate among intellectually humble individuals (Porter et al., 2020). Accepting one's limitations and mistakes could help individuals develop resilience. By recognizing that setbacks and failures are part of the learning process, individuals can better cope with challenges and bounce back more effectively when faced with difficult situations.

Intellectually humble individuals are also better equipped to deal with differing opinions and have an openness to respect the perspectives of others, including when it comes to health information. For instance, those who are more intellectually humble are more likely to engage in investigative health behaviors in response to false information regarding COVID-19 (Koetke, Schumann, & Porter, 2022). Research has also shown that intellectual humility can reduce polarization, extremism, and susceptibility to conspiracy theories, while enhancing learning, discovery, and scientific credibility (Bowes, Costello, Ma, & Lilienfeld, 2021; Hoekstra & Vazire, 2021; Mellers, Tetlock, & Arkes, 2019; Porter et al., 2022; Wong & Wong, 2021). Polarizing arguments can lead to stress and anger which are bad for one's emotional and physical health. Although stress can sometimes be beneficial for individuals and may be viewed as adaptive, when the disturbance is continual, long-term stressors can damage health (Schneiderman, Ironson, & Siegel, 2005). Less reliance on the need to always be correct along with an openness to other opinions may thus result in fewer stressful experiences.

The theoretical importance of this link has been garnering attention in recent years with scholars speculating a positive intellectual humility-health link (Bowes & Tasimi, 2022). Although not necessarily establishing a direct relationship between concrete outcomes of increased or decreased well-being, intellectual humility exhibits positive associations with related constructs that are established predictors of better well-being. For instance, test anxiety, which is described as feelings of fear and worry confined to the basis of academic testing procedures, is negatively associated with intellectual humility because people with this mindset are more inclined to separate their knowledge from their self-worth, thus diminishing the extent that exams are seen as anxiety-provoking occurrences (Huynh, Sramek, Sifuentes, Lilley, & Bautista, 2023). Intellectually humble individuals are also more likely to trust psychiatrists and psychologists and are more likely to recommend mental health therapy for themselves and others (Bağ, Wójtowicz, & Kutnik, 2021). They have higher levels of trait openness and are more likely to accept new ideas and perspectives, which may result in better levels of well-being (Kang, Steffens, Pineda, et al., 2023).

Intellectually humble individuals tend to approach life with a steady sense of self-assurance and authentic pride, navigating challenges with emotional balance and a secure sense of self-worth (Bağ & Kutnik, 2021; Bowes & Tasimi, 2022; Haggard et al., 2018; Krumrei-Mancuso & Rouse, 2015; Porter & Schumann, 2018). These qualities help them thrive, leading to more fulfilling and satisfying lives compared to those with lower levels of intellectual humility (Hill, Lewis Hall, Wang, & Decker, 2021). Individuals with greater intellectual humility are less consumed by narcissism and entitlement, avoiding the emotional turmoil and negative thought patterns that often accompany such traits (Bağ & Kutnik, 2021; Bo, Sharp, Fonagy, & Kongerslev, 2017; Haggard et al.,

2018; Krumrei-Mancuso & Rouse, 2015). Thus, some preliminary evidence on well-being and a wealth of evidence from associated constructs, coupled with extant theoretical arguments support the potential association between greater intellectual humility and increased well-being, but a thorough investigation examining these relationships across a multitude of constructs is lacking to date.¹

1.3. Measuring intellectual humility and its conceptualization

Researchers view intellectual humility as a multifaceted disposition that directs cognition, emotion, and behavior in numerous contexts (Alfano et al., 2017). Due to the complex nature of intellectual humility, we employed the CIHS scale for our investigation. We utilized this measure because it would allow us to better pinpoint which specific aspects of intellectual humility relate to the specific positive or negative well-being outcomes. The CIHS includes four subscales: Independence of Intellect and Ego, Openness to Revising One's Viewpoints, Respect for Others' Viewpoints, and Lack of Intellectual Overconfidence (Krumrei-Mancuso & Rouse, 2015). Distinct from other constructs, the CIHS displays incremental validity in predicting variables such as openness and dispositional humility, and it also correlates expectedly with these traits (Leary et al., 2017). The multidimensionality of the CIHS scale allows for its usage in exploring the many nuances of intellectual humility (Kroplewski, Krumrei-Mancuso, Bielecka, & Szcześniak, 2022). Use of this scale is promising because it encompasses both intrapersonal and interpersonal domains, while also describing social and epistemic dispositions (Kroplewski et al., 2022).

Krumrei-Mancuso and Rouse integrated many of the existing theories of intellectual humility in an effort to build an intrapersonal and interpersonal construct manifesting as a nonthreatening awareness of one's intellectual fallibility, the Comprehensive Intellectual Humility Scale (Krumrei-Mancuso & Rouse, 2015). The first subscale of the CIHS measures the Independence of Intellect and Ego, focusing on how much individuals can separate their intellectual pursuits from their ego. This construct was conceptualized as a healthy independence and a focus on information, ideas, and thinking without too much concern about one's intellect (Krumrei-Mancuso et al., 2019). A person who is confident in their opinions and not offended or threatened in the face of differing views would score high on this construct (Kroplewski et al., 2022). We expect this to drive certain effects of positive well-being, as persons with this disposition may have reduced emotional reactivity (Porter et al., 2022), better interpersonal relationships (Koetke, Schumann, Welker, & Coleman, 2024), and confidence/stability (Kidd, 2016; Leary et al., 2017) in the face of diverse situations. The second subscale assesses openness to revising one's viewpoints, highlighting a willingness to change one's mind when presented with new information. Krumrei-Mancuso and colleagues defined this sub-scale as an openness to new information that has the power to improve and update people's current beliefs and knowledge (Krumrei-Mancuso et al., 2019). This mindset allows one to adjust their opinions when presented with compelling evidence.

The third subscale gauges respect for others' viewpoints, reflecting how much value individuals place on different perspectives, conceptualizing this measure as the tendency to be confident and respectful in interpersonal pursuits of knowledge without egotistical concerns about how one's viewpoints are considered by others (Krumrei-Mancuso et al., 2019). A person scoring high on this sub-scale appreciates different

viewpoints and welcomes opposing ideas (Kroplewski et al., 2022). Finally, the fourth subscale focuses on lack of intellectual overconfidence, indicating a person's tendency to avoid overestimating their knowledge. Such a person recognizes the fallibility of one's beliefs and is open to alternative perspectives (Kroplewski et al., 2022). Intellectually humble individuals often recognize the limitations of their cognitive capabilities and acknowledge that their viewpoints may be incorrect, which serves as a safeguard against uncritically embracing perspectives as always accurate (Krumrei-Mancuso et al., 2019). Ultimately, each of these four factors coalesce and allow for the view of intellectual humility to be understood as a balance between intellectual arrogance and intellectual cowardice (Jones, 2012; Krumrei-Mancuso & Rouse, 2015).

1.4. Current studies

We test the intellectual humility-mental health link in two correlational studies. Following our exploratory approach in Study 1, we propose that specific facets of intellectual humility are particularly influential in promoting well-being. In Study 2, we replicate these findings in a pre-registered study, while also controlling for trait levels of agreeableness and modesty. Independence of Intellect and Ego may reduce psychological stress by fostering a balanced self-concept that is less dependent on external validation, allowing for better emotional regulation and resilience. Similarly, Respect for Others' Viewpoints encourages open-mindedness and empathy, which may enhance social connections and reduce conflict, contributing to greater well-being. All relevant materials are available on the Open Science Framework (OSF), https://osf.io/6gepr/?view_only=e7ba5d33acfd4c82ad72288902a0e3ac.

2. Study 1

In Study 1, we examined intellectual humility and its association with positive outcomes and negative outcomes of well-being. We hypothesized that greater intellectual humility would relate positively to positive outcomes (H1) and significantly negatively to negative outcomes of well-being (H2).

2.1. Methods

Consent for the study was obtained electronically at the beginning of the survey. The survey was fielded via Qualtrics.

2.1.1. Participants

We recruited 400 participants online via Prolific (www.prolific.co). Two participants were excluded because they failed the attention check (i.e., "In order for psychological research to produce meaningful results it's necessary to ensure that participants are paying attention when they respond to questions. To show us you are paying attention, please select the "Somewhat agree" option from the choices below). We retained 398 participants (99.5 % of the original sample). Our sample included 194 male-identifying, 194 female-identifying, and 10 nonbinary/unspecified participants. The racial composition of our sample indicated that 44 Black-identifying, 262 White-identifying, and 33 Asian-identifying completed the survey. The average age was 39.8 years (SD = 13.7 years).

2.1.2. Materials and procedure

The following measures were presented to participants in random order. Scores were estimated by calculating the average value of each construct.

2.1.2.1. Intellectual humility. Several existing measures of intellectual humility exist. These include, among others, the informant-report measure (McElroy et al., 2014), the 6-item unifactorial General

¹ It's possible that the relationship between well-being and intellectual humility is bidirectional, such that individuals who have higher well-being could also be more intellectually humble. The majority of published research on intellectual humility tends to conceptualize this construct as a predictor of individual (Krumrei-Mancuso, Haggard, LaBouff, & Rowatt, 2019), interpersonal (Schumann, Koetke, & Ludwig, 2022), and intergroup (Krumrei-Mancuso, 2017) outcomes. Nevertheless, we acknowledge this possibility and suggest that future research employ a longitudinal approach to study the potential bidirectionality in this potential relationship.

Intellectual Humility Scale (Leary et al., 2017), the 22-item Multi-dimensional Measure of Intellectual Humility developed (Alfano et al., 2017), and the 22-item Comprehensive Intellectual Humility Scale (CIHS; Krumrei-Mancuso & Rouse, 2015). Despite the plethora of existing constructs capturing intellectual humility, recent evidence has cast doubt on the utility of self-report measures of the construct, as they do not necessarily correlate with the behavioral expression of intellectual humility (Costello, Newton, Lin, & Pennycook, 2023). Nevertheless, in the absence of an easy-to-use and relatively cognitively untaxing behavioral measure, relying on self-reports of intellectual humility can help us establish basic relationships with focal outcomes.

We wanted to investigate the different aspects and thus utilized the “Comprehensive Intellectual Humility Scale” (CIHS: 22 items, $\alpha = 0.89$; Krumrei-Mancuso & Rouse, 2015). This scale included the following subscales: independence of intellect and ego (5 items, $\alpha = 0.90$, i.e., “When someone contradicts my most important beliefs, it feels like a personal attack... [reverse coded]”); openness to revising one’s viewpoints (5 items, $\alpha = 0.87$, i.e., “I’m willing to change my mind once it’s made up about an important topic...”); respect for others’ viewpoints (6 items, $\alpha = 0.84$, i.e., “I welcome different ways of thinking about important topics...”); lack of intellectual overconfidence (6 items, $\alpha = 0.76$, i.e., “When I am really confident in a belief, there is very little chance that belief is wrong...”).

2.1.2.2. Meaning in life. We utilized the meaning in life scale (10 items, Steger et al., 2006), which is comprised of the presence of meaning (5 items, $\alpha = 0.95$, i.e., “My life has a clear sense of purpose...”) and search for meaning (5 items, $\alpha = 0.95$, i.e., “I am searching for meaning in my life...”). Steger and colleagues (2006) state that: “The Presence of Meaning subscale measures the subjective sense that one’s life is meaningful, whereas Search for Meaning measures the drive and orientation toward finding meaning in one’s life.” Notably, extant research finds that typically, the presence of meaning correlates negatively with searching for meaning (e.g., Steger et al., 2006).

2.1.2.3. Life satisfaction. We measured life satisfaction with the scale developed by Diener et al. (1985, 5 items, $\alpha = 0.92$, i.e., “In most ways, my life is close to my ideal...”).

2.1.2.4. Self-flourishing. A measure of self-flourishing was also included (8 items, $\alpha = 0.94$, i.e., “I am engaged and interested in my daily activities...”; Diener et al., 2009).

2.1.2.5. Depressive symptoms. Depression is captured by the Center of Epidemiological Studies Depression Scale, (CESD-10; Andresen et al., 1994) on a 4-point Likert scale (10 items; $\alpha = 0.90$, i.e., “I could not “get going”...”).

2.1.2.6. General anxiety symptoms. General anxiety was captured by the

general anxiety disorder scale (GAD-7) on a 4-point Likert scale (7-items; $\alpha = 0.93$, i.e., “Feeling nervous, anxious, or on edge...”; Spitzer et al., 2006).

2.2. Results

First, we examined bivariate correlations between the facets of intellectual humility and well-being outcomes (see Table 1). None of the facets of the CIHS were correlated to a degree that would indicate issues of multicollinearity (r s ranged from 0.22 to 0.59). The facet of Independence of Intellect and Ego was the strongest and most consistent correlate, having positive correlations with meaning presence, life satisfaction, and self-flourishing and negative correlations with anxiety and depression. Respect for others’ viewpoints also exhibited similar associations but with a seemingly smaller magnitude.

We then estimated linear regression models with the intellectual humility subscales as simultaneous predictors for each outcome (see Table 2). Results suggest that “Independence of Intellect and Ego” and “Respect for Others’ Viewpoints” seem to drive these associations rather than “openness to revising one’s viewpoints” or “lack of intellectual overconfidence”.

3. Study 2

Our second study sought to both replicate and expand on the findings of Study 1 by eliminating alternative explanations for the observed associations between facets of intellectual humility and well-being. Specifically, we sought to control for how agreeable a person was in general, to ensure it was not a mere tendency to agree with others more that explains any observed associations. We also controlled for modesty, to ensure that it is not a general tendency to agree with others and not exert one’s opinion that accounts for the observed relationships. All aspects of this study were pre-registered, https://aspredicted.org/7XR_FM4.

3.1. Methods

Consent for the study was obtained electronically at the beginning of the survey. The survey was fielded via Qualtrics.

3.1.1. Participants

We recruited a sample size of 500 participants from Prolific. This sample was large enough to detect correlation coefficients as small as $r = 0.15$, with power of 0.90, alpha of 0.05 for two-tailed tests, based on an a priori power analysis. With respect to gender, our sample was 238 male-identifying, 254 female-identifying, and 8 nonbinary/unspecified. In terms of race, our sample was 81 black-identifying, 348 white-identifying, and 47 Asian-identifying. The mean age was 45.5 years (SD = 15.9 years).

Table 1
Bivariate correlations between all measures.

Measure	IH - egoless	IH - revising	IH - respect	IH - balance	Self-flourishing	Meaning searching	Meaning presence	Life satisfaction	Anxiety
IH - Egoless	–								
IH - Revising	0.22***	–							
IH - Respect	0.39***	0.59***	–						
IH - Balance	0.29***	0.39***	0.38***	–					
Self-Flourishing	0.25***	0.12**	0.29***	0.06	–				
Meaning - Searching	–0.28***	0.01	–0.01	–0.08	–0.13**	–			
Meaning - Presence	0.22***	0.02	0.19***	0.03	0.77***	–0.32***	–		
Life Satisfaction	0.12**	0.10*	0.17***	0.10*	0.76***	–0.19***	0.70***	–	
Anxiety	–0.30***	–0.04	–0.15**	–0.04	–0.59***	0.22***	–0.47***	–0.51***	–
Depression	–0.33***	–0.07	–0.19***	–0.07	–0.73***	0.25***	–0.60***	–0.65***	0.82***

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. Egoless = Independence of intellect and ego; Revising = Openness to revising one’s viewpoint; Respect = Respect for others’ viewpoints; Balance = Lack of intellectual overconfidence.

Table 2
Linear regression models with IH subscales as simultaneous predictors.

Outcome	Independence of intellect and ego			Openness to revising own views			Respect for others' viewpoints			Lack of intellectual overconfidence			Adj. R ²
	b	SE	p	b	SE	p	b	SE	p	b	SE	p	
Meaning – Searching F(4, 393) = 10.07, p < .001	-0.51	0.08	<0.001	0.10	0.15	0.525	0.31	0.18	0.086	-0.11	0.12	0.365	0.08
Meaning – Presence F(4, 393) = 8.43, p < .001	0.29	0.08	<0.001	-0.32	0.15	0.035	0.62	0.18	<0.001	-0.12	0.12	0.335	0.08
Life Satisfaction F(4, 393) = 3.38, p = .009	0.09	0.08	0.304	-0.02	0.15	0.915	0.39	0.18	0.030	0.07	0.12	0.581	0.02
Self-Flourishing F(4, 393) = 12.44, p < .001	0.21	0.06	<0.001	-0.10	0.11	0.363	0.58	0.13	<0.001	-0.12	0.09	0.186	0.10
Depressive Symptoms F(4, 393) = 13.07, p < .001	-0.22	0.04	<0.001	0.06	0.07	0.388	-0.15	0.07	0.062	0.04	0.05	0.470	0.11
Anxious Symptoms F(4, 393) = 10.89, p < .001	-0.22	0.04	<0.001	0.07	0.07	0.360	-0.12	0.08	0.165	0.06	0.06	0.269	0.09

Note. Adj. = Adjusted. Bolded values denote significant findings.

3.1.2. Materials and procedure

All measures were presented to participants in random order. Scores were estimated by calculating the average value of each construct. We utilized the same scales from Study 1 - and added another psychopathology measure and several HEXACO scales.

The following measures were identical to Study 1: Intellectual humility (a = 0.89), with each its subscales (independence of intellect and ego, a = 0.90; openness to revising own views, a = 0.86; respect for others' viewpoints, a = 0.89; lack of intellectual overconfidence, a = 0.75), presence of meaning (a = 0.93) and search for meaning (a = 0.94), satisfaction with life (a = 0.91), self-flourishing (a = 0.92) depressive symptoms (a = 0.90), and anxiety symptoms (a = 0.92).

3.1.2.1. Psychological distress. We included a measure of distress to expand our findings by focusing on general stress and sub-clinical trauma experienced daily. This measure (Kessler et al., 2002; 10 items, a = 0.94, i.e., "... about how often did you feel that everything was an effort?") was reliable.

3.1.2.2. Modesty. The modesty subscale of the honesty-humility trait in the HEXACO-PI (Lee & Ashton, 2004) was used (4 items, a = 0.75, i.e. "I wouldn't want people to treat me as though I were superior to them").

3.1.2.3. Agreeableness. Finally, to capture a general disposition to agree with others we measured the trait of agreeableness from the HEXACO-

PI, with all of its subscales (forgiveness, gentleness, flexibility, and patience; 16 items, a = 0.86, i.e., "I tend to be lenient in judging other people.").

3.2. Results

As we predicted, the independence of intellect and ego had positive correlations with presence of meaning and self-flourishing (but not life satisfaction), and negative correlations with depression, anxiety, and distress (see Table 3). Modesty had inconsistent correlations with these measures, whereas agreeableness correlated with meaning and self-flourishing and depression, anxiety, and distress. Importantly, correlations between all sub-scales of the CIHS, modesty and agreeableness did not exceed a value that would suggest problems with collinearity, suggesting that at most, 19 % (R² = 0.19) of the variance between these measures was shared.

In a final series of linear regression models (see Table 4), we regressed all outcomes on the four facets of intellectual humility, while also controlling for modesty and agreeableness. Agreeableness emerged as a consistent predictor for all measures except for searching for meaning. It predicted increased presence of meaning, life satisfaction and self-flourishing, and decreased depression and anxiety symptoms, as well as decreased psychological distress. Additionally, modesty was also a consistent predictor, in a manner similar to agreeableness for all outcomes except for anxiety and distress. Further, it had a negative association with searching for meaning. Importantly, and, replicating

Table 3
Bivariate correlations between all measures for Study 2.

	IH - egoless	IH - revise	IH - respect	IH - balance	Meaning - searching	Meaning - presence	Life satisfaction	Self-flourishing	Anxiety	Depression	Distress	Modesty
IH - egoless	-											
IH - revise	0.16***	-										
IH - respect	0.26***	0.68***	-									
IH - balance	0.26***	0.37***	0.34***	-								
Meaning - searching	-0.31***	0.01	-0.01	-0.03	-							
Meaning - presence	0.27***	0.01	0.14**	-0.03	-0.24***	-						
Life satisfaction	0.11**	0.03	0.02	-0.05	-0.16***	0.65***	-					
Self-flourishing	0.22***	0.20***	0.24***	0.02	-0.09*	0.71***	0.70***	-				
Anxiety	-0.37***	-0.11**	-0.09*	-0.03	0.29***	-0.43***	-0.46***	-0.50***	-			
Depression	-0.36***	-0.10*	-0.10*	-0.06	0.32***	-0.55***	-0.59***	-0.64***	0.80***	-		
Distress	-0.39***	-0.09	-0.08	-0.08	0.35***	-0.47***	-0.48***	-0.53***	0.87***	0.87***	-	
Modesty	0.27***	0.19***	0.26***	0.42***	-0.21***	-0.10*	-0.19***	-0.13**	-0.04	0.01	-0.07	-
Agreeableness	0.44***	0.19***	0.32***	0.24***	-0.12**	0.35***	0.26***	0.36***	-0.34***	-0.30***	-0.27***	0.14**

Note. * p < .05, ** p < .01, *** p < .001. Egoless = Independence of intellect and ego; Revising = Openness to revising one's viewpoint; Respect = Respect for others' viewpoints; Balance = Lack of intellectual overconfidence. Bolded values denote significant findings.

Table 4
Linear regression models with CIHS and HEXACO subscales as simultaneous predictors.

Outcome	Egoless		Revising		Respect		Balance		Modesty		Agreeableness		Adj.R ²
	b	SE	b	SE	B	SE	b	SE	b	SE	b	SE	
Meaning – searching F(6, 493) = 12.09, <i>p</i> < .001	-0.35***	0.06	-0.03	0.10	0.17	0.11	0.17*	0.08	-0.28***	0.07	-0.03	0.09	0.12
Meaning – presence F(6, 493) = 19.27, <i>p</i> < .001	0.21***	0.05	-0.18	0.09	0.24*	0.10	-0.14	0.07	-0.23***	0.06	0.49***	0.08	0.18
Life satisfaction F(6, 493) = 12.00, <i>p</i> < .001	0.07	0.06	0.09	0.10	-0.07	0.10	-0.08	0.08	-0.31***	0.07	0.49***	0.08	0.12
Self-flourishing F(6, 493) = 22.43, <i>p</i> < .001	0.10**	0.04	0.12	0.07	0.15*	0.07	-0.07	0.05	-0.22***	0.04	0.36***	0.06	0.20
Depressive symptoms F(6, 493) = 17.34, <i>p</i> < .001	-0.17***	0.02	-0.07	0.04	0.05	0.04	0.03	0.03	0.07*	0.03	-0.15***	0.04	0.16
Anxious symptoms F(6, 493) = 20.27, <i>p</i> < .001	-0.17***	0.03	-0.11*	0.05	0.10*	0.05	0.08*	0.04	0.02	0.03	-0.20***	0.04	0.19
Psychological distress F(6, 493) = 17.05, <i>p</i> < .001	-0.23***	0.03	-0.10	0.06	0.11	0.06	0.03	0.04	0.02	0.04	-0.15**	0.05	0.16

Note. Adj. = Adjusted. Egoless = Independence of intellect and ego; Revising = Openness to revising one’s viewpoint; Respect = Respect for others’ viewpoints; Balance = Lack of intellectual overconfidence. Bolded values denote significant findings.
p* < .05, *p* < .01, ****p* < .001.

associations emerging in Study 1, our results suggest that independence of intellect and ego is a consistent predictor for all constructs, except for life satisfaction, predicting increased presence of meaning, self-flourishing, and decreased search for meaning, depressive and anxiety symptoms, as well as decreased psychological distress.

4. Discussion

Results from both studies show that independence of intellect and ego is a key facet of intellectual humility with regard to its potential benefits for well-being. This facet, over and above the other aspects of intellectual humility, is consistently related to increased well-being across multiple measures, including the presence of meaning in life, feeling that one’s life is flourishing, as well as reductions in depressive symptoms, anxiety, and psychological distress. Furthermore, analyses from Study 2 illustrate that these associations are not merely explained by the overlap of intellectual humility with a tendency to be agreeable, modest, or both. Conversely, these relationships involve a deeper psychological process that promotes individual well-being (and perhaps positive interpersonal relations). This pattern highlights the importance of separating one’s intellectual pursuits from one’s ego, allowing individuals to engage in more open-minded thinking, approach challenges with less emotional reactivity, and maintain a balanced, yet confident perspective of themselves and the world around them.

Intellectually humble individuals are less egocentric and tend to experience less mental distress. They may not be overly threatened by differences in opinions or by being incorrect, and they do not attach their identity to being “right.” In the face of contradictions, intellectually humble individuals may be more engaged in social interactions, which may lead to greater opportunities for initiating meaningful relationships. This observed association suggests that those who can admit when they are wrong are more likely to accept helpful information, which is crucial for therapeutic or health-related settings. Logically, such individuals tend to be more receptive to constructive criticism, rather than assuming their viewpoint is the only valid one. By stepping back from ego-driven concerns, they can devote more cognitive effort to reaching meaningful conclusions and fostering intellectual curiosity. This dynamic promotes overall well-being and leads to more productive and fulfilling interpersonal experiences (Krumrei-Mancuso et al., 2019).

There are several potential mechanisms through which intellectual humility, especially the facet of independence of intellect and ego, predicts increased well-being. Some potential candidates include increased uncertainty tolerance (Hillen, Gutheil, Strout, Smets, & Han, 2017), self-affirmation (Sherman & Cohen, 2006), reduced ego threat (Bergeron & Dandeneau, 2016) and improved emotional regulation

(Gross & John, 2003). Intellectual humility has been linked to these constructs, which in turn, predict changes in well-being— either as increases (as with uncertainty tolerance, self-affirmation, and emotion regulation) or decreases (as with ego threat).

Uncertainty tolerance relates to how different people handle uncertainty and there is a conscious awareness of one’s ignorance about details of the world which can result in an array of cognitive, emotional, and behavioral responses (Hillen et al., 2017). Those who are equipped to handle uncertainty might have relevant qualities of intellectual humility that allow them to make logical decisions. The ability to cope with uncertainty may reduce discomfort, thereby increasing well-being.

Self-affirmation theory holds that the “self-system aims to maintain an image of self-integrity and moral adequacy” which motivates individuals to restore their self-worth if that image ever becomes threatened (Sherman & Cohen, 2006). Recent research has explored how self-affirmation can increase one’s ability to incorporate adaptive functioning and it can play a role in promoting resilience to life’s challenges, creating a beneficial impact on well-being (Howell, 2017). This suggests that there is a possible connection between intellectual humility, in the sense of being open-minded and non-defensive, and self-affirmation.

Emotion regulation, the ability to exert control over one’s emotional responses, has been linked to strategies closely related to elements of intellectual humility such as cognitive openness, and both have similar positive implications for well-being (Gross & John, 2003; Jarvinen & Paulus, 2017). The relationship between these two constructs can potentially help to better understand the association between intellectual humility and well-being.

Finally, ego threat, typically thought of as a threat to self-image or self-esteem can lead to an array of negative or positive responses. Adaptive responses to negative experiences through activating mindfulness can have emotional and cognitive benefits which are beneficial for well-being (Bergeron & Dandeneau, 2016). Employing implicit mindfulness and other aspects of intellectual humility thus may lead to less ego threat and as a result individuals are faced with reduced negative physiological arousals and depressive symptoms as a result (Johnson & O’Brien, 2013).

4.1. Limitations and future directions

Although we found consistent evidence for a positive correlation between intellectual humility scores, as well as specific facets of intellectual humility (particularly for the Independence of Intellect and Ego), it is important to consider key limitations of the present investigation. First, the measure of intellectual humility that was utilized relies on first-person self-reports. Recent research casts a certain level of doubt on the

ecological validity of these measures due to the chance that people could overreport their degree of intellectually humble characteristics due to illusory superiority and bias blind spot phenomena (Costello et al., 2023). Thus, future research should strive to replicate these correlation patterns both with third-person accounts, as well as with behavioral outcomes of intellectual humility. This could potentially build upon past work seen with the informant-report measure developed which aims to avoid self-report biases, and an inclusion of an array of metacognitive, behavioral, and motivational instruments that capture a more comprehensive measure of intellectual humility (Costello et al., 2023; McElroy et al., 2014).

Further, although we tried to account for (by virtue of including as covariates in Study 2) agreeableness and modesty, it's possible that other personality traits such as Openness should be accounted for in future analyses. Individuals who are more open to new experiences might also be more likely to accept the limitations of their own intellect. This is evident in extant research showcasing positive associations with open-mindedness (Krumrei-Mancuso & Worthington Jr., 2023) and with openness to hearing the opposition's perspective (Porter & Schumann, 2018). Thus, future research should account for openness as a personality measure correlated with intellectual humility as well.

Experiments that induce intellectual humility and track longitudinally the influence of increased intellectual humility could also be beneficial for future explorations (Porter et al., 2022). Ultimately, we agree with recent research and empirical evidence suggesting that alternative measurement approaches should be employed to more rigorously evaluate intellectual humility as a construct and increase the validity of the present results (Costello et al., 2023).

Moreover, the present investigation is limited by its reliance on U.S. samples. This focus on a particular Western culture may overlook the variability in how intellectual humility and well-being manifest and relate to each other across different cultural contexts. Well-being, much like happiness, is defined and experienced differently across cultures. As such, it is essential to conduct cross-cultural investigations to broaden understanding and appreciate the nuanced ways in which these constructs operate globally.

Future research should explore societal differences and do so by employing more representative, diverse approaches, such as the culturally sensitive measures of well-being, which combines measures of life satisfaction (e.g., "You are satisfied with your life") and interdependent happiness (e.g., "You believe that you and those around you are happy"), weighing how much each kind of well-being is valued across different countries (Krys et al., 2023). In addition, intellectual humility also varies across cultures and assessing this quality through behavioral assessment rather than through surveys that rely on specific language constraints, could more accurately capture the effects of differing cultural contexts (Porter et al., 2022). Considering cultural nuances is crucial when making generalized statements about well-being and intellectual humility, as inclusive measures can provide a more accurate picture of these associations across different populations.

5. Conclusion

Our investigation highlights the connection between intellectual humility and enhanced well-being. While this relationship is complex and remains correlational in this investigation, it opens new avenues for understanding how intellectual humility contributes to mental wellness. Ultimately, the present evidence suggests that intellectually humble individuals are more likely to enjoy a flourishing and fulfilling life with an abundance of meaning, and a lack of psychopathology symptoms of anxiety, depression, and psychological distress, all of which may enrich life and promote a greater sense of satisfaction, purpose, and growth.

CRedit authorship contribution statement

Adaeze Chukwudebe: Investigation, Conceptualization, Writing –

review & editing, Writing – original draft. **M. Mookie C. Manalili:** Methodology, Investigation, Formal analysis, Conceptualization, Writing – review & editing, Writing – original draft. **Liane Young:** Software, Resources, Data curation, Writing – review & editing. **Stylianos Syropoulos:** Validation, Supervision, Project administration, Methodology, Investigation, Conceptualization, Writing – review & editing.

Declaration of competing interest

The authors have no conflict of interests to declare.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.paid.2025.113091>.

Data availability

A link to the Open Science Framework containing the survey materials and data is provided in the manuscript

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