

VOLITIONAL PERSONALITY CHANGE

Who in the World is Trying to Change Their Personality Traits?

Volitional Personality Change Among College Students in 56 Countries

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Abstract

Recent research conducted largely in the US suggests that most people would like to change one or more of their personality traits. Yet almost no research has investigated the degree to which and in what ways volitional personality change (VPC), or individuals' active efforts towards personality change, might be common around the world. Through a custom-built website, 13,278 college student participants from 56 countries using 42 different languages reported whether they were currently trying to change their personality and, if so, what they were trying to change. Around the world, 60.40% of participants reported that they are currently trying to change their personalities, with the highest percentage in Thailand (81.91%) and the lowest in Kenya (21.41%). Among those who provide open-ended responses to the aspect of personality they are trying to change, the most common goals were to increase emotional stability (29.73%), conscientiousness (19.71%), extraversion (15.94%), and agreeableness (13.53%). In line with previous research, students who are trying to change *any* personality trait tend to have relatively low levels of emotional stability and happiness. Moreover, those with relatively low levels of socially desirable traits reported attempting to increase what they lacked. These principal findings were generalizable around the world.

Key words: volitional personality change, cross-cultural, college students

Who in the World is Trying to Change Their Personality Traits?:**Volitional Personality Change among College Students in 56 Countries**

Personality changes in small and sometimes large ways throughout the lifespan (see McAdams & Olson, 2010; Roberts et al., 2006). Attempts to understand the underlying mechanisms of personality change have emphasized the effects of life events and shifting social roles (e.g., Bleidorn et al., 2018; Caspi et al., 2005; but see Asselmann et al., 2020). Several studies have focused on personality change that occurs during a common life event for young adults - the transition to college (Bleidorn, 2012; Corker & Donnellan, 2017; Donnellan et al., 2007; Lüdtkke et al., 2011). Students are often faced with new social and academic challenges that, to be overcome, require adaptive goal pursuit, personal value adjustment, and even personality change (Astin, 1993; Newcomb, 1973).

Recently, researchers have begun to investigate individuals' active role in their personality development, or "volitional personality change" (VPC) (Allemand & Flückiger, 2017; Baranski et al., 2016; Hudson & Roberts, 2014; Miller et al., 2019; Quintus et al., 2017). Although this topic would seem to be universally relevant, nearly all previous research on VPC to date has focused on individuals within the United States. In an effort to remedy this omission and generalize VPC findings outside the US, the current project systematically investigates VPC across 56 countries. Specifically, we assess the proportion of college students attempting to change their personality as well as seeking to identify robust and internationally consistent trends in *who* is currently trying to change, and *what* specifically they are trying to change. Regardless of the countries they reside in, college students are all at a potentially transformative period of life. The present study addresses the ways in which their efforts to change their personalities are robust and consistent around the world.

Volitional personality change

Research on VPC has used varying methodologies, but almost all studies have been conducted entirely within the US. These studies have consistently found that (1) the majority of individuals either currently want to or are trying to increase their emotional stability, conscientiousness and extraversion, (2) attempts and desires to change personality are inversely related to psychological well-being, and (3) current levels of certain personality traits are inversely related to desires or attempts to change them (e.g., individuals low in extraversion aspire to be more extraverted; Baranski et al., 2017, 2019; Hudson & Fraley, 2016, Hudson & Roberts, 2014; Hudson et al., 2020; Stieger et al., 2020; Robinson et al., 2015; Stieger et al., 2020; Quintus et al., & 2017).

An early investigation used a modified version of the Big Five Inventory (BFI; John & Srivastava, 1999) and demonstrated that between 87% (for agreeableness) and 97% (for conscientiousness) of US participants reported a desire to change their personality traits and that, in the case of extraversion, emotional stability, and conscientiousness, participants' desire for specific Big Five personality changes were negatively related to current, corresponding levels of these traits (Hudson & Roberts, 2014). These researchers also demonstrated that over the course of 16 weeks, individuals who accomplished their personality change goals experienced increases in well-being (Hudson & Fraley, 2016).

Moving beyond research that assessed *desires* for personality change, Baranski et al., (2017, 2020) asked US participants whether they were *currently trying* to change an aspect of their personalities (i.e., yes or no), and if they answered in the affirmative, asked what they were trying to change. 67.5% of participants reported trying to change an aspect of their personalities; for conscientiousness, extraversion and emotional stability, there was a strong, inverse

relationship between individuals' current personality trait levels and their reported change attempts. This conceptual replication of Hudson and Fraley (2016) was successful despite the subtle but important distinction between wanting and actually trying to change one's personality.

To our knowledge, only one published study has investigated VPC across multiple countries. Robinson and colleagues (2015) asked participants from Iran, China and the United Kingdom to complete the Big Five Trait-Change Goal Inventory (BF-TGI), which asks participants to rate whether and in what direction they want to change each of the Big Five traits (i.e., extraversion, agreeableness, conscientiousness, neuroticism and openness to experience). Participants in Iran had consistently higher proportions of trait change goals in the socially desirable direction (e.g., increases in extraversion, decreases in neuroticism) relative to China and the UK. Also, researchers reported that overall, participants indicated a goal to decrease levels of neuroticism more than any other trait (Robinson et al., 2015).

While large-scale, cross-cultural investigations of VPC are rare, evidence elsewhere demonstrates cross-cultural similarities in the pursuit of self-improvement. For instance, self-direction (i.e., independent thought, creating, exploring) consistently ranked high in importance across more than 60 countries (Deci & Ryan, 2008; Schwartz & Bardi, 2001; Schwartz et al., 2001; for a cross-cultural review, see Ryan & Deci, 2000). Similarly, Grouzet and colleagues (2005) found that the goals to feel competent and autonomous were similarly common across 15 countries. These tendencies towards self-improvement were particularly pronounced among college students. Indeed, previous research demonstrates that compared to older individuals, college students and college-aged individuals have a higher percentage of goals with a "gain orientation" (Heckhausen, 1997; Penningroth & Scott, 2012).

The relationship between VPC and individual differences

Key components of self-discrepancy theory (SDT) may help build a theoretical foundation in explaining why particular individual difference variables are relevant in distinguishing between those who are and are not trying to change their personality traits (Higgins, 1987). SDT posits that discrepancies between the ideal and actual self are associated with lower levels of happiness (Higgins, 1987). Thus, perhaps the most theoretically relevant individual differences to VPC are those that signal to the individual that there is a discrepancy between their ideal and actual self, and thus the need for personality change. For example, individuals with low levels of happiness and high levels of anxiety or depression may be motivated to shrink the discrepancy between their ideal and actual selves and in the process, alleviate these negative traits and emotions by changing the personality traits they perceive as contributing to their unhappiness, anxiety, and depression (DeFruyt et al., 2006).

Previous research suggests several other individual difference variables that may be associated with attempts to change one's personality. For instance, individuals high in narcissism tend to have exaggerated egotism, and thus might not see any need for change (Back et al., 2013). Previous research also demonstrates that individuals high in dispositional optimism tend to take an active approach to personal goal attainment (Carver & Scheier, 2002), and might be similarly willing to work towards specific personality change goals. Conversely, optimists generally view their present circumstances and future personal outcomes as positive (Busseri et al., 2009) and thus might not see any reason to change anything about themselves.

Other personality traits might also be relevant for VPC. Individuals high in conscientiousness, for instance, might take responsibility in improving their circumstances and in doing so seek to make active efforts towards their personality change (Soto et al., 2017). Likewise, previous research has shown openness to experience to relate to self-exploration

(McAdams et al., 2012), so we may expect individuals high in openness to experience to self-reflect upon the aspects of themselves that they want to change and then explore creative routes towards change. Finally, we may expect religiosity to play a role in whether individuals attempt to change their personalities. Specifically, religious individuals may consider self-improvement as a means to fulfill self-actualization (Watson et al., 1995).

The Current Project

The current project adds to the literature in several key-ways. First, this study is the first to assess the proportion of college students across a large set of countries who are currently trying to change their personality traits. While this aspect of the study is strictly exploratory, it lays the necessary foundation for future confirmatory research that assesses cross-country variation in attempting and achieving personality change.

In particular, the current project seeks to establish VPC findings that are generalizable beyond the US. In the emerging field of VPC, across studies with varying methodologies, the majority of participants sampled have indicated a desire or current attempt to change at least one aspect of their personalities. Moreover, there has been a near uniform tendency for current levels of personality traits to be negatively related to desires or attempts to change corresponding traits. The current project is among the first to systematically test the generalizability of these robust and consistent findings outside the US, and the first to do so across over 3 dozen countries. This contribution is particularly important given the field's reliance on W.E.I.R.D samples (white, educated, industrialized, rich, democratic, Heine et al., 2006) and the current push to extend our understanding of individuals outside these populations.

Finally, the current project seeks to extend understanding of VPC beyond global personality traits, to facets of personality. Specifically, we utilized the facet structure defined by

the Big Five Inventory 2 (BFI-2; Soto & John, 2017). This structure defines each of the Big Five traits along three facets (e.g., extraversion is defined by facets energy level, sociability, and assertiveness), offering more conceptual specificity to measurement. Importantly, while each trait's facets are inter-correlated, they are also meaningfully different and show distinctive relations with self-report and peer-report external criteria (Soto & John, 2017).

We assess VPC using a method that combines the use of idiographic, open-ended responses with nomothetic, quantitative coding of the responses. This nomothetic-idiographic approach is especially suitable for measuring volitional personality change for two reasons. First, asking participants to report volitional personality change goals in their own words prompts them to report goals that are readily recalled and thus particularly salient to individuals, especially those that stand up against other more immediately gratifying personal goals (e.g., losing weight, making more money). Indeed, a recent study found that when prompted to list their top ten personal goals, the majority of individuals listed at least one personality change goal (Miller et al., 2019). Second, the idiographic-nomothetic approach limits the risk of demand characteristics. Likert-type personality change goal inventories may prompt participants to endorse several items that are socially desirable yet may not all receive concerted effort towards change in the desired direction from the individual. Thus, in contrast with idiographic-nomothetic methods, Likert-type rating methods may over-estimate volitional personality change goal pursuit.

Going beyond previous research in these ways, the current project evaluates VPC by college students across 56 countries. This investigation is exploratory, but is generally guided by four research questions:

1. What proportion of college students around the world and in various countries are currently trying to change their personality traits?

2. What personality traits and other individual differences (e.g., narcissism, optimism, happiness) are associated with whether one is trying to change *any* personality trait?

The present 56 country dataset has a range of individual differences that we are exploring to answer this research question.

3. What *specific* traits are college students around the world currently trying to change?

4. How are attempts to change *specific* personality traits related to current personality traits?

Method

Participants

This study was approved by the University of California Institution Review Board (HS-1-046; The International Situations Project). All participants were college students recruited by collaborators who were local faculty members – a total of 13,278¹ participants using 42 different languages from 79 cities, 56 countries² and 6 continents (71.82% female; mean age = 21.69 years, SD = 4.52 years)³. Participants volunteered or were awarded course credit, monetary compensation, or a small gift for their participation. See Table 1 for demographics.

¹ Data from 3 data collection sites had fewer than 50 participants and were not included. Data from 11 additional data collection sites included in previous publications using the ISP dataset (see Lee et al., 2020) did not provide translations of open-ended VPC responses and were thus also not included.

² Due to its cultural distinction from China, Hong Kong participants are considered a separate sample from their mainland Chinese counterparts. Thus, while we have included it in our list of countries, we acknowledge that Hong Kong is not a country and is instead a special administrative region.

³ We ran parallel analyses with the age range limited to 18-29 years. There were no substantial differences between these results and results conducted with the entire sample. See these age standardized analyses in the supplementary materials at osf.io/enrd4.

Table 1
International sample demographic information

| Country | Total N | Female % | Mean Age (SD) |
|----------------|---------|----------|---------------|
| Argentina | 140 | 78.57 | 24.28 (5.66) |
| Australia | 197 | 75.63 | 19.71 (3.48) |
| Austria | 113 | 81.42 | 21.26 (2.37) |
| Bolivia | 135 | 57.78 | 21.01 (2.16) |
| Brazil | 309 | 72.17 | 23.68 (7.10) |
| Bulgaria | 150 | 70.67 | 25.05 (6.48) |
| Canada | 302 | 79.14 | 21.86 (3.98) |
| Chile | 384 | 66.41 | 21.45 (3.08) |
| China | 426 | 48.59 | 22.64 (4.39) |
| Colombia | 181 | 74.03 | 21.68 (4.16) |
| Croatia | 218 | 64.68 | 21.46 (1.70) |
| Czech Republic | 193 | 80.83 | 22.65 (4.82) |
| Denmark | 244 | 79.92 | 22.94 (5.12) |
| Estonia | 293 | 83.96 | 25.88 (7.67) |
| France | 228 | 85.53 | 22.60 (6.31) |
| Georgia | 140 | 80.00 | 20.29 (1.79) |
| Germany | 454 | 75.11 | 24.36 (6.39) |
| Hong Kong | 142 | 59.15 | 19.00 (1.27) |
| Hungary | 175 | 60.57 | 21.71 (1.97) |
| India | 221 | 49.77 | 22.38 (4.65) |
| Israel | 171 | 61.40 | 25.35 (4.22) |
| Italy | 717 | 64.57 | 21.86 (3.73) |
| Japan | 242 | 61.98 | 22.58 (4.83) |
| Jordan | 141 | 80.85 | 19.87 (2.14) |
| Kenya | 139 | 65.47 | 21.17 (1.90) |
| Latvia | 169 | 82.84 | 24.87 (6.09) |
| Lithuania | 144 | 78.47 | 20.26 (1.75) |
| Macedonia | 54 | 74.07 | 21.22 (1.73) |
| Malaysia | 228 | 71.05 | 21.53 (2.80) |
| Mexico | 169 | 68.05 | 20.66 (2.18) |
| Netherlands | 300 | 81.33 | 20.13 (3.03) |
| New Zealand | 129 | 86.05 | 19.19 (4.43) |
| Nigeria | 134 | 33.58 | 24.75 (5.67) |
| Norway | 159 | 74.21 | 23.89 (5.04) |
| Pakistan | 114 | 50.00 | 20.61 (2.73) |
| Palestine | 295 | 83.39 | 22.17 (4.81) |
| Philippines | 331 | 69.18 | 19.71 (2.22) |
| Poland | 234 | 83.33 | 22.35 (5.32) |
| Portugal | 156 | 87.82 | 21.66 (5.84) |
| Romania | 177 | 57.06 | 22.84 (5.57) |
| Russia | 158 | 78.48 | 21.92 (4.71) |

| | | | |
|---------------------|---------------|--------------|---------------------|
| Serbia | 184 | 86.41 | 19.73 (1.25) |
| Singapore | 136 | 77.94 | 20.93 (2.13) |
| Slovakia | 148 | 69.59 | 22.41 (2.71) |
| Slovenia | 122 | 57.38 | 20.43 (1.54) |
| South Korea | 281 | 58.36 | 22.35 (2.25) |
| Spain | 419 | 85.20 | 19.73 (3.47) |
| Sweden | 126 | 72.22 | * |
| Switzerland | 447 | 84.34 | 22.28 (4.89) |
| Taiwan | 162 | 76.54 | 19.71 (1.35) |
| Thailand | 188 | 80.32 | 19.24 (1.14) |
| Turkey | 153 | 62.75 | 20.76 (3.52) |
| Ukraine | 243 | 77.37 | 20.60 (1.90) |
| United Kingdom | 136 | 88.97 | 25.64 (8.08) |
| United States | 1360 | 67.72 | 19.85 (3.11) |
| Vietnam | 167 | 77.25 | 19.05 (1.33) |
| World Sample | 13,278 | 71.82 | 21.69 (4.52) |

Note. *Due to confidentiality constraints, Sweden does not have age data

Procedure

Each participant received a unique participant ID from a local faculty collaborator and was directed to the study's custom-built website (ispstudy.ucr.edu). They completed informed consent followed by a series of measures assessing their situational experiences, daily behavior, volitional personality change, and ratings of personality traits and other individual differences (e.g., subjective happiness, dispositional optimism). Upon completing the survey, participants had the opportunity to receive feedback on their trait levels based on the personality measure included.

Materials translation procedure

The content of the website (e.g., consent form, instructions, survey questions) was translated into 42 languages by local collaborators, who are all psychology researchers, and independently back-translated to English. After reviewing the back-translated version of the materials, the ISP project coordinators resolved any discrepancies through consultation with the local collaborators.

Measures

The International Situations Project is a large study that seeks to explore variation and similarity of situational experience and individual differences around the world (Baranski et al., in press; Lee et al., in press; see <https://osf.io/yv2nq/> for a complete list of previous publications)

⁴. The measures described below are the ones relevant to the current analyses and are unique to this article.

Volitional personality change (VPC). Participants responded “yes” or “no” to “Is there an aspect of your personality that you’re currently trying to change?” If they answered in the affirmative, a box opened in which they were asked to report the aspects of their personality they were trying to change, an open-ended format akin to methods used by Baranski et al., 2017. See below for a detailed description of the procedure for coding these open-ended VPC responses.

Personality traits and other individual differences. Several potentially relevant personality traits and individual differences were also analyzed for this study. As this study was exploratory, we cast a large net in our assessment of the relationship between VPC and individual differences.

Personality traits were measured using the 60-item Big Five Inventory 2 (BFI-2; Soto & John, 2017) in which each trait is represented by three facets (four items each). The trait and facets are: extraversion (sociality, assertiveness, energy), agreeableness (trust, respect, compassion), conscientiousness (productiveness, responsibility, organization), negative emotionality (anxiety, depression, emotional volatility), and openness mindedness (intellectual curiosity, creativity, aesthetic appreciation). Participants responded to each item (e.g., “I am

⁴ See the complete list of International Situations Project (ISP) measures at <https://osf.io/enrd4/>.

someone who is outgoing”) on a five-point scale (1 = “Disagree strongly”; 5 = “Agree strongly”).

Happiness was measured using the Subjective Happiness Scale (SHS; Lyubomirsky & Lepper, 1999) and the Interpersonal Happiness Scale (IHS; Hitokoto & Uchida, 2015). The SHS is a 4-item scale (e.g., “In general, I consider myself”; 1 = “Not of very happy person” to 7 = “A very happy person”) and the ISH is a 9-item scale (e.g., “I believe that I and those around me are happy”; 1 = “Strongly disagree” to 5 = “Strongly agree”).

Participants also completed the 6-item Life Orientation Test (LOT-R; Scheirer, 1995) to assess dispositional optimism (e.g., “In uncertain times, I usually expect the best”; 1 = “Strongly disagree” to 5 = “Strongly agree”), the 10-item Honesty/Humility scale (e.g., “I wouldn’t use flattery to get a raise or promotion at work, even if I thought it would succeed”; 1 = “Strongly disagree” to 5 = “Strongly agree”) of the HEXACO measure of personality traits (facets: sincerity, fairness, greed, modesty; Ashton, & Lee, 2009), and the Narcissistic Admiration and Rivalry Questionnaire (NARQ; Back et al., 2013) (“I deserve to be seen as a great person”; 1 = “Strongly disagree” to 5 = “Strongly agree”).

Across all 78 separate data collection sites, 62% of the omega reliability coefficients were above .70 (mean $\Omega = .73$; SD = .11; range = .27 - .95), indicating homogenous internal consistency across countries. See Supplementary materials at osf.io/enrd4 for means, SDs, intercorrelations, and Omega reliability coefficient for each measure.

Coding of volitional personality change intentions

As stated above, participants reported whether they were currently trying to change their personalities. For participants who answered ‘yes’, research assistants coded their open-ended answers to the following question, “What aspect of your personality are you currently trying to

change?” using 44 binary categories, referring to attempts to increase or decrease each of the Big Five personality traits and their respective facets (40 categories total), as well as increases or decreases of honesty and humility. This method was adapted from Baranski et al., 2017.

Three US research assistants independently coded the entirety of participants’ responses (translated to English from 41 languages by local collaborators) using a two-step process. In Step 1, research assistants coded each response along 12 mutually exclusive categories. Specifically, they determined whether the participant’s response indicated an attempt to increase or decrease one of Big Five traits or honesty/humility (example of a response coded as indicating a desire to increase extraversion: “shyness and being unsocial”). In Step 2, the research assistants then coded which of three facets the participant’s response best aligned (example of a response coded as indicating an attempt to increase sociability facet: “Poor active communication”).

Of the 8,204 participants who indicated that they were currently trying to change some aspect of their personalities, 170 did not provide a response when asked to report exactly what they were trying to change. 164 responses were missing due to coding error. For the remaining 7,863 participants, we used majority rule to determine the final response ratings (we marked the code a ‘hit’ if 2 out of 3 coders indicated the response fell into the category, otherwise the response was treated as a ‘miss’). If a participant listed more than one VPC intention, only the first one listed was coded⁵. Categories representing attempts to increase or decrease the Big Five personality traits plus honesty and humility captured 88.39% of participants’ responses; the remaining responses were either too vague to represent a single category (e.g., “many different things”), were unintelligible or left blank (e.g., “asdfklkj”), or expressed desires to change physically or resolve an addiction. Since coders rated each response as adhering to one of 12 trait

⁵ A relatively small subset of participants reported more than one personality change goal. To ensure analyses were consistent across participants, we only included the first one listed.

categories (step 1), we calculated an estimate of agreement among raters for this single ‘trait category’ variable. Inter-rater agreement was good ($\kappa = .68$).

See Table 2 for example responses for each trait category and osf.io/enrd4 for data and R script used for all analyses reported below.

Table 2
Participants’ responses of VPC content categories

| Category | Example responses |
|--------------------------|---|
| Inc Extraversion | |
| Sociability | <ul style="list-style-type: none"> ● shyness ● trying to be more outgoing |
| Energy | <ul style="list-style-type: none"> ● not enthusiastic; too quiet ● relative bored in character |
| Assertiveness | <ul style="list-style-type: none"> ● To manage to impose me and my points of view a bit more at work ● More confidence when expressing myself and making decisions |
| Inc Agreeableness | |
| Compassion | <ul style="list-style-type: none"> ● Putting people before myself ● selfishness, stronger sense of self |
| Trust | <ul style="list-style-type: none"> ● Trusting others ● Holding grudges |
| Respect | <ul style="list-style-type: none"> ● Gossiping ● I'd like to be better towards others, and not bitter/sarcastic for no reason |
| Inc Conscientiousness | |
| Organization | <ul style="list-style-type: none"> ● Disorganized behavior ● Careless in time management |
| Productiveness | <ul style="list-style-type: none"> ● Motivation to study ● Trying to be more productive, procrastinating less |
| Responsibility | <ul style="list-style-type: none"> ● Discipline ● My maturity |
| Inc Emotional Stability | |
| Dec Anxiety | <ul style="list-style-type: none"> ● Trying to be more relaxed when it comes to doing things. ● My more emotional/neurotic tendency to get overwhelmed in situations resulting in anxiety |
| Dec Depression | <ul style="list-style-type: none"> ● My self-esteem: becoming more confident and self-assured ● Wish to be more optimistic |
| Dec Emotional Volatility | <ul style="list-style-type: none"> ● Being less sensitive ● I need to change my emotional personality which may easily get upset when challenges are coming. |
| Inc Openness | |

| | |
|--------------------------|--|
| Creativity | <ul style="list-style-type: none"> ● To depersonalize the physical from the mental ● Dynamism |
| Aesthetic Appreciation | <ul style="list-style-type: none"> ● Adventurousness ● Look at the world |
| Intellectual Curiosity | <ul style="list-style-type: none"> ● Brainless |
| Inc Honesty | <ul style="list-style-type: none"> ● NA |
| Inc Humility | <ul style="list-style-type: none"> ● My egocentricity. ● Too much pride and little acceptance of criticism |
| Dec Agreeableness | |
| Compassion | <ul style="list-style-type: none"> ● Weak and incapable of saying no ● Playful and paid too much attention about others easily |
| Trust | <ul style="list-style-type: none"> ● Naivety ● I am trying to be more observant/cautious in relationship with others. |
| Respect | <ul style="list-style-type: none"> ● Straightforwardness ● Be possessive, demanding, and dependent |
| Dec Conscientiousness | |
| Productiveness | <ul style="list-style-type: none"> ● Being too focused on academics that I forgot time for myself and others |
| Responsibility | <ul style="list-style-type: none"> ● To not overthink everything ● Overanalyzing things and wanting to control everything |
| Organization | <ul style="list-style-type: none"> ● To not be such a perfectionist ● Constant planning |
| Dec Extraversion | |
| Sociability | <ul style="list-style-type: none"> ● Being too extroverted. ● Clinginess |
| Energy | <ul style="list-style-type: none"> ● The loudness of my personality seems to bug some people I live with ● When I am exited I am really loud so I am trying to be little bit quit. |
| Assertiveness | <ul style="list-style-type: none"> ● too might ● overbearing ● I am trying to cut down on interrupting people while they are talking and on using crutch words |
| Dec Emotional Stability | |
| Inc Anxiety | <ul style="list-style-type: none"> ● NA |
| Inc Depression | <ul style="list-style-type: none"> ● Being too carefree and happy ● to be too much optimistic ● Over optimism |
| Inc Emotional Volatility | <ul style="list-style-type: none"> ● I want to be more emotional. ● Suppression and no expression of emotions |
| Dec Openness | |
| Creativity | <ul style="list-style-type: none"> ● Being more rational |

| | |
|---------------------|--------------------------|
| Aesthetic | |
| Appreciation | ● NA |
| Intellectual | |
| Curiosity | ● NA |
| Dec Honesty | ● NA |
| Dec Humility | ● NA |
| Physical Change | ● Too weak and delicate |
| | ● Sleeping late at night |
| Resolving Addiction | ● Drinking |
| | ● Drug use (marijuana) |
| Other | ● All of it |
| | ● Negative |

Note. Inc = Increase, Dec = Decrease; NA indicates that there were no agreed upon responses that fell in to the category.

Analysis

Given the substantial discrepancy in sample size across male and female participants, as well as the consistent tendency for female participants to report VPC at higher rates than their male counterparts, all analyses reported below are weighted equally across gender.

To supplement the bi-variate correlations reported in the text, we ran a series of logistic multilevel models to understand the relationship between current traits and VPC at the individual level accounting for nesting at the country level. Specifically, we ran the models as specified below for the relationship between the dichotomous VPC variable (i.e., yes or no VPC) and 22 current traits (and facets) (e.g., current levels of extraversion predicting VPC).

We used the *lme4* R package to estimate the intercepts and slopes for VPC using individual predictors of current personality trait levels accounting for country level variation. For the Level 1 model, VPC was modeled as a function of current traits on the individual level:

$$1. \text{ Level 1 Model: } \text{logit}(\text{VPC}_{ij}) = b_{0j} + b_{1j}\text{Current trait} + r_{ij}$$

In the Level 2 Model, intercepts and slopes were allowed to differ across countries:

$$2. \text{ Level 2 Model:}$$

$$b0j = y_{00} + u_{0j}$$

$$b1j = y_{10} + u_{1j}$$

The entire mixed-model is specified as followed:

$$3. \text{ Mixed Model: } VPC_{ij} = \gamma_{00} + \gamma_{10}(\text{Current trait}) + u_{0j} + u_{1j}(\text{Current trait}) + r_{ij}$$

To assess whether there was significant variation across countries, we ran a series of model fit comparisons to assess the Chi-square difference between a model which fixes all current trait and VPC trait regression slopes to be equal across countries (Level 1 Model) and a model which allows these relationships to vary by country (Level 2 Model; i.e., the addition of u_{1j} term). These model fit comparisons reveal that for all current trait – dichotomous VPC relationships, the fixed sloped model fitted the data better than the random sloped model, indicating that there was no significant variation across countries in how well an individual's current personality trait level predicted whether they were trying to change any aspect of their personalities.

Results

What proportion of college students around the world and across countries are currently trying to change their personality traits?

The majority (60.40%) of college students around the world indicated that they were currently trying to change at least one aspect of their personalities. Countries with the highest percentage of people attempting VPC included Thailand (81.91%), Russia (80.84%), Brazil (78.87%) and Malaysia (77.64%), whereas Kenya (21.41%), Israel (28.21%), Slovakia (43.24%), Hong Kong (46.48%), Turkey (46.39%), and the United States (48.53%) were among the lowest.

308 See Table 3 for a complete list of VPC proportions by gender and country and Figure 1 for a
 309 visualization of the variation of country-level VPC percentage around the world.⁶

Table 3

Percentage of individuals indicating an attempt to change an aspect of their personalities by country and gender (sorted in descending order of All %)

| Country | Female % | Male % | All %† |
|----------------|----------|--------|--------|
| Thailand | 85.43 | 78.38 | 81.91 |
| Russia | 82.26 | 79.41 | 80.84 |
| Brazil | 79.82 | 77.91 | 78.87 |
| Malaysia | 73.46 | 81.82 | 77.64 |
| Georgia | 79.46 | 71.43 | 75.45 |
| India* | 80.91 | 69.37 | 75.14 |
| Vietnam | 79.07 | 65.79 | 72.43 |
| Argentina | 80.91 | 63.33 | 72.12 |
| Czech Republic | 70.51 | 72.97 | 71.74 |
| Estonia | 74.80 | 68.09 | 71.45 |
| Sweden | 75.82 | 65.71 | 70.77 |
| Portugal | 70.80 | 68.42 | 69.61 |
| Bolivia | 75.64 | 63.16 | 69.40 |
| South Korea | 72.56 | 65.81 | 69.19 |
| Croatia | 71.63 | 66.23 | 68.93 |
| Serbia | 65.41 | 72.00 | 68.71 |
| United Kingdom | 63.64 | 73.33 | 68.49 |
| Norway | 63.56 | 73.17 | 68.37 |
| Bulgaria | 70.75 | 65.91 | 68.33 |
| France | 66.15 | 69.70 | 67.93 |
| Hungary | 63.21 | 69.57 | 66.39 |
| Japan | 69.33 | 59.78 | 64.56 |
| New Zealand | 56.76 | 72.22 | 64.49 |
| Austria | 71.74 | 57.14 | 64.44 |
| Latvia | 69.29 | 58.62 | 63.96 |
| Philippines | 62.01 | 65.69 | 63.85 |
| Ukraine* | 72.87 | 54.55 | 63.71 |
| Singapore | 66.98 | 60.00 | 63.49 |
| Switzerland | 63.93 | 62.86 | 63.40 |
| Denmark | 64.62 | 61.22 | 62.92 |
| Germany | 60.70 | 64.60 | 62.65 |
| Australia | 71.81 | 52.08 | 61.95 |
| Canada | 60.67 | 61.90 | 61.29 |
| Spain | 65.83 | 56.45 | 61.14 |
| Nigeria | 62.22 | 59.55 | 60.89 |

⁶ In an effort to help explain cross-country variation in VPC, we ran additional correlational analyses between countries' VPC proportion and several existing country-level variables (e.g., GDP per capita, population density). Please see these analyses in our supplemental materials: osf.io/enrd4.

| | | | |
|------------------|----------------------------|----------------------------|----------------------------|
| Italy* | 69.11 | 51.18 | 60.15 |
| Chile | 63.53 | 56.59 | 60.06 |
| Colombia | 60.45 | 57.45 | 58.95 |
| Slovenia* | 71.43 | 46.15 | 58.79 |
| Poland | 60.00 | 56.41 | 58.21 |
| Pakistan | 59.65 | 54.39 | 57.02 |
| Taiwan | 63.71 | 50.00 | 56.86 |
| Palestine | 54.07 | 59.18 | 56.63 |
| Mexico | 60.87 | 51.85 | 56.36 |
| China | 57.49 | 52.05 | 54.77 |
| Netherlands* | 46.31 | 62.50 | 54.41 |
| Jordan | 60.53 | 44.44 | 52.49 |
| Lithuania* | 61.95 | 41.94 | 51.95 |
| Macedonia | 45.00 | 57.14 | 51.07 |
| Romania | 47.52 | 50.00 | 48.76 |
| United States | 50.27 | 44.87 | 47.57 |
| Turkey | 54.17 | 38.60 | 46.39 |
| Hong Kong | 48.81 | 43.10 | 45.96 |
| Slovakia | 39.81 | 46.67 | 43.24 |
| Israel | 27.62 | 28.79 | 28.21 |
| Kenya | 21.98 | 20.83 | 21.41 |
| Average (M of %) | 64.09 (<i>SD</i> = 12.04) | 59.68 (<i>SD</i> = 12.06) | 61.89 (<i>SD</i> = 11.69) |
| World | 63.56 | 57.23 | 60.40 |

Note. Across countries, female participants reported VPC significantly more than their male counterparts, ($t(6,674) = 6.61, p < .001$). * Countries with significant gender differences. † Percentages are balanced across gender.

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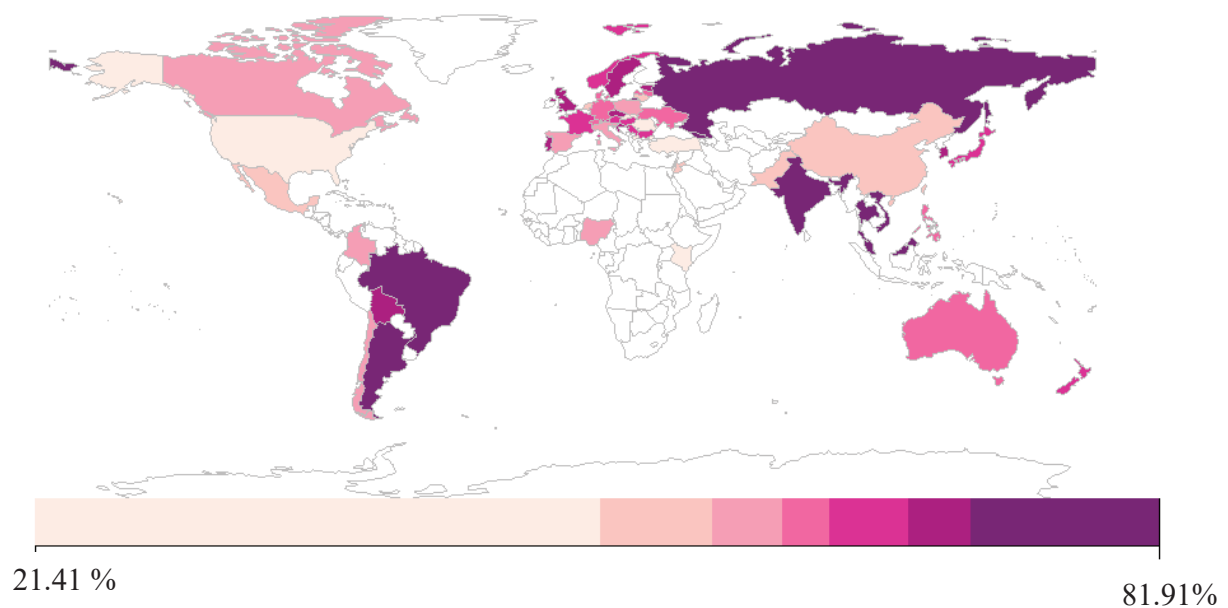


Figure 1. Heat map of percentage of college students attempting volitional personality change

What personality traits and other individual differences are associated with whether one is trying to change *any* personality trait?

To test the generalizability of research addressing *who* is currently attempting or desiring personality change, we next assessed which personality traits and other individual differences are associated with participants' reported attempts to change *any* aspect of their personality traits (i.e., 'yes' when asked if they are currently trying to change an aspect of their personalities). To do so, we ran a series of correlations with their current levels of the Big Five traits and honesty/humility (plus their facets), subjective and interdependent happiness, dispositional optimism, narcissism, and religiosity.

Table 4

Correlations between any attempt to change one's personality traits and other individual differences and analysis of variation across countries.

| | <i>r [99% CI]</i> | <i>ΔX² (p-value)</i> |
|--------------------------|-------------------|---------------------------------|
| Extraversion | -.07 [-.11, -.02] | 4.67 (.22) |
| Sociability | -.06 [-.11, -.02] | 3.91 (.41) |
| Assertiveness | -.05 [-.10, -.01] | 3.24 (.20) |
| Energy | -.04 [-.08, .01] | 4.79 (.11) |
| Agreeableness | -.03 [-.07, .02] | 0.59 (.76) |
| Compassion | .03 [-.02, .07] | 1.09 (.60) |
| Respect | -.01 [-.06, .03] | 0.11 (.95) |
| Trust | -.06 [-.11, -.02] | 2.60 (.37) |
| Conscientiousness | -.12 [-.17, -.08] | 2.55 (.30) |
| Organization | -.09 [-.13, -.05] | 2.79 (.37) |
| Productiveness | -.12 [-.16, -.07] | 2.45 (.40) |
| Responsibility | -.11 [-.15, -.06] | 2.90 (.36) |
| Negative Emotion | .24 [.20, .29] | 1.60 (.51) |
| Anxiety | .22 [.18, .26] | 0.77 (.71) |
| Depression | .22 [.17, .26] | 2.36 (.41) |
| Emotional volatility | .18 [.14, .23] | 1.93 (.53) |
| Openness | .14 [.10, .18] | 0.23 (.89) |
| Intellectual curiosity | .15 [.11, .19] | 7.07 (.04) |
| Aesthetic appreciation | .14 [.09, .18] | 0.96 (.69) |
| Creativity | .04 [.00, .09] | 1.90 (.49) |
| Honesty | .03 [-.02, .07] | 4.12 (.21) |
| Sincerity | .01 [-.04, .05] | 2.44 (.30) |
| Fairness | .03 [-.01, .07] | 2.61 (.31) |
| Greed | .01 [-.04, .05] | 1.95 (.49) |
| Modesty | .03 [-.02, .07] | 11.54 (.03) |
| Subjective Happiness | -.17 [-.21, -.12] | 9.70 (.02) |
| Interdependent Happiness | -.19 [-.24, -.15] | 4.02 (.14) |
| Optimism | -.07 [-.11, -.02] | 3.51 (.18) |
| Narcissism | -.01 [-.06, .03] | 3.96 (.14) |
| Religiosity | -.02 [-.06, .03] | 14.48 (<.001) |

Note. Significant ΔX^2 represents significant variability in the strength of current trait and VPC trait relationships. Correlation coefficients > .03 are significant at the .001 level. $N = 13,278$

In line with the overarching goal of the current study, we sought to assess which of these relationships are robust and consistent across individuals from an array of cultural backgrounds. When participants are treated as one 'world sample' VPC was positively related to negative emotionality ($r = .24$, 99% CI [.20, .29]), along with all three of its facets and negatively related to both subjective happiness ($r = -.17$, [-.21, -.12]) and interdependent happiness ($r = -.19$, [-.24,

-.15]). Finally, in line with our expectations, there was a moderate relationship between VPC and the intellectual curiosity ($r = .15$, [.11, .19]) and aesthetic appreciation facets of openness ($r = .14$, [.09, .18]) all r 's in this paragraph are $p < .001$). Against our expectations, conscientiousness, narcissism and all other remaining traits were unrelated to VPC. Importantly, virtually none of the relationships between current personality traits and VPC varied significantly in strength across countries at the $p < .001$ level (see Table 4).

One interesting exception arose to these otherwise consistent patterns. Converse to our expectations, religiosity was virtually unrelated to VPC when all participants were treated as one world sample; however, this relationship varied significantly across countries ($\Delta X^2 = 14.48$, $p < .001$, Table 4). Indeed, VPC was positively related to religiosity in countries such as Slovenia, India, and Malaysia, and negatively related to religiosity in countries such as Macedonia, New Zealand, and Latvia. See the Supplementary Materials at osf.io/enrd4 for VPC-individual difference correlations for each country.

What specific traits are college students around the world currently trying to change?

Across all 56 countries, among students reporting attempted personality change, the most commonly reported personality change attempts were to increase levels of emotional stability (29.73%), conscientiousness (19.71%), extraversion (15.94%) and agreeableness (13.53%) (see Figures 2a-2d for heat map visualizations of country-level variation for attempts to change each trait). Attempts to increase levels of openness, honesty or humility, and attempts to decrease any trait were rare (i.e., less than 2% of responses; see the Supplementary Materials at osf.io/enrd4). For the sake of brevity and relevance, subsequent analyses will only relate to VPC attempts to increase extraversion, agreeableness conscientiousness, and emotional stability.

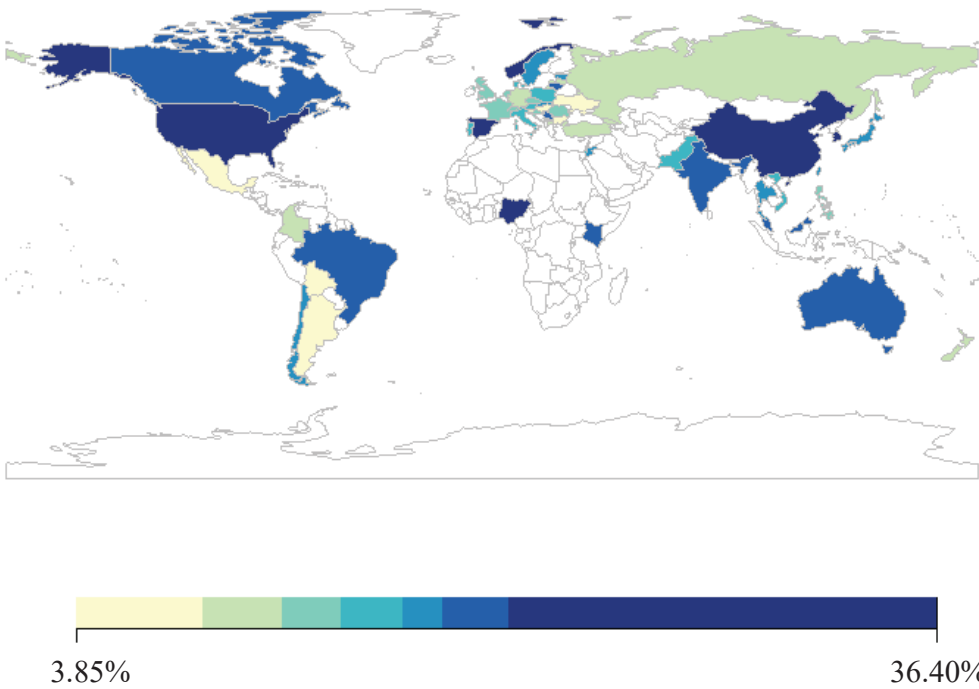


Figure 2a. Heat map of percentage of college students, among those who are trying to change their personality, who are currently trying to **increase Extraversion** across countries.

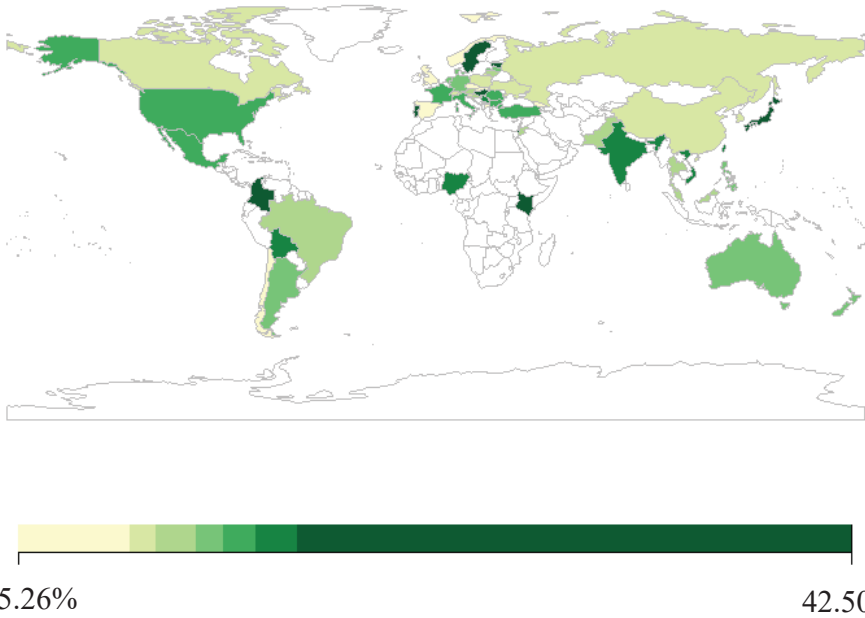
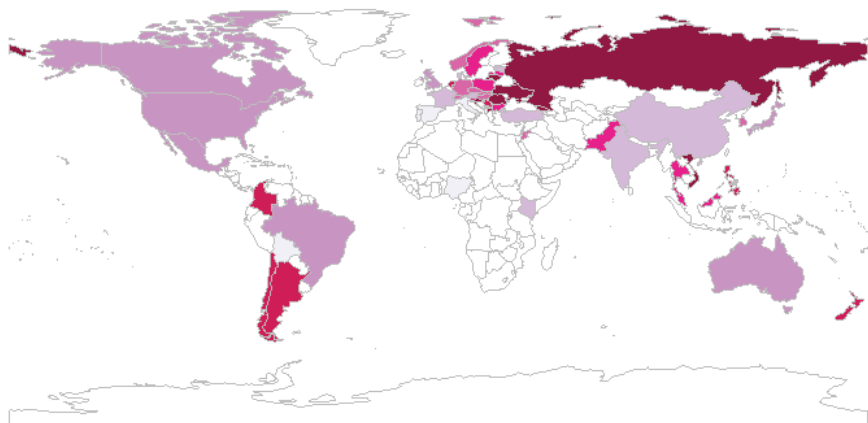
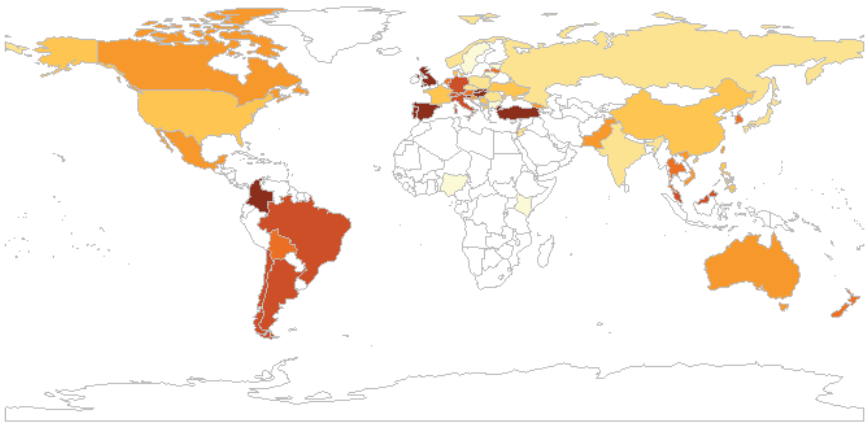


Figure 2b. Heat map of percentage of college students, among those who are trying to change their personality, who are currently trying to **increase Agreeableness** across countries.



6.5% 37.10%

Figure 2c. Heat map of percentage of college students, among those who are trying to change their personality, who are currently trying to **increase Conscientiousness** across countries.



14.70% 54.30%

Figure 2d. Heat map of percentage of college students, among those who are trying to change their personality, who are currently trying to **increase Emotional Stability** across countries.

Facet level assessment of VPC content revealed a more precise understanding of exactly what college students are trying to change about themselves. For instance, VPC to increase conscientiousness was largely driven by attempts to increase levels of productiveness (54.38% of those with VPC to increase conscientiousness), and VPC to increase levels of extraversion was largely driven by attempts to increase sociability (78.53% of those with VPC to increase extraversion). In contrast, VPC to increase levels of emotional stability was fairly well-distributed among its facets of anxiety, depression and emotional volatility (25.65%, 37.03%, and 30.12%, respectively, of those with VPC to increase emotional stability). See Table 5 for the percentages of responses that fell into categories with the top 10 highest percentages overall.

Table 5

VPC percentage for the World sample (facets listed as % within respective trait)

| | % VPC |
|--------------------------------|--------------|
| Inc Extraversion | 15.94 |
| Inc Sociability | 78.53 |
| Inc Assertiveness | 12.36 |
| Inc Energy | 2.93 |
| Inc Agreeableness | 13.53 |
| Inc Compassion | 53.50 |
| Inc Trust | 10.32 |
| Inc Respect | 13.60 |
| Inc Conscientiousness | 19.71 |
| Inc Organization | 11.86 |
| Inc Productiveness | 54.38 |
| Inc Responsibility | 27.14 |
| Inc Emotional Stability | 29.73 |
| Dec Anxiety | 25.65 |
| Dec Depression | 37.03 |
| Dec Emotional Volatility | 30.12 |
| Inc Openness | 1.32 |
| Inc Creativity | 12.60 |
| Inc Aesthetic Appreciation | 33.06 |
| Inc Intellectual Curiosity | 59.10 |

Note. Inc = increase, Dec = decrease, $n = 7,863$ (i.e., those who reported an attempt to change their personalities). With the exception of increased openness, we did not include VPC categories in which less than 5% of responses fell into categories. Facet percentages that do not add up to 100% within each trait indicate that coders did not agree what facet aligned with participants' VPC open-ended responses.

How are attempts to change a *specific* personality trait related to current personality traits?

To test the generalizability and robustness of the common VPC finding that desires or attempts to change a particular personality trait are inversely related to current, corresponding traits, we ran a series of correlations testing the relationship between corresponding and non-corresponding current trait and VPC trait pairs. To extend previous VPC research further, we ran these correlations on both trait and facet levels.

In line with research limited to US college students (Hudson & Fraley, 2016), when our student participants were treated as one world sample, current personality traits were consistently related to attempts to change corresponding traits in the expected direction. Also, as with previous analyses, looking at these relationships on the facet levels provides a more comprehensive assessment. For extraversion, there were strong, negative relationships between the VPC to increase extraversion and current levels of extraversion ($r = -.23$, 99% CI $[-.29, -.18]$), and all three of its facets⁷. Given the large proportion of VPC responses that were coded as sociability, it is unsurprising that this relationship were all driven by VPC to increase sociability ($r = -.22$, $[-.28, -.17]$). With the exception of the facet responsibility, strong, negative correlations arose between VPC to increase conscientiousness and its facets and current traits and facets levels. The strongest of these relationships were between corresponding current trait/facet and VPC trait/facet pairs. For instance, while the intention to increase levels of productiveness was related to current levels of conscientiousness and all three of its facets, the strongest of these relationships was between the attempt to increase levels of productiveness and current levels of

⁷ Given the large sample size, r s $> .05$ are significant at the .001 level.

productiveness ($r = -.16$; $[-.21, -.10]$). The same pattern was observed for negative emotionality and its facets (i.e., anxiety, depression, and emotional volatility).

Importantly, relationships between corresponding current trait/facet and VPC trait/facet pairs were stronger relative to non-corresponding pairs. As an interesting exception, stronger relationships between VPC to increase agreeableness and low levels of extraversion emerged than did corresponding relationships between VPC to increase agreeableness and current agreeableness. It may be the case that the ways in which researchers measure agreeableness and extraversion is different to how college students conceptualize attempts to change these traits. That is, participants may express attempts to be more compassionate or trusting in an effort to make more friends and thus to be more social. Thus, low levels of extraversion may motivate individuals to work towards being more agreeable. See Tables 6a-d for correlations between current personality traits and VPC trait pooled across all samples.

Table 6a

Correlations between current Extraversion (and facets) and VPC to increase Extraversion (and facets)

| | VPC Increase Extraversion | VPC Increase Sociability | VPC to Increase Assertiveness | VPC to Increase Energy |
|-----------------------------|------------------------------|-----------------------------|----------------------------------|---------------------------|
| Current Extraversion | -.23 [-.29, -.18] | -.22 [-.28, -.17] | -.02 [-.08, .04] | -.03 [-.09, .03] |
| Current Sociability | -.26 [-.31, -.20] | -.26 [-.31, -.20] | -.03 [-.08, .03] | -.03 [-.09, .03] |
| Current Assertiveness | -.17 [-.23, -.12] | -.16 [-.21, -.10] | .00 [-.05, .06] | -.05 [-.10, .01] |
| Current Energy | -.12 [-.18, -.06] | -.11 [-.17, -.06] | -.03 [-.09, .02] | .00 [-.06, .06] |
| Current Agreeableness | .05 [.00, .11] | .05 [-.01, .11] | -.01 [-.07, .05] | .04 [-.02, .09] |
| Current Compassion | -.01 [-.07, .04] | -.01 [-.07, .05] | -.01 [-.07, .05] | .02 [-.04, .07] |
| Current Respect | .10 [.04, .16] | .09 [.03, .15] | -.01 [-.07, .05] | .05 [-.01, .10] |
| Current Trust | .04 [-.02, .09] | .02 [-.03, .08] | .01 [-.05, .06] | .03 [-.03, .09] |
| Current Conscientious. | .05 [-.01, .10] | .04 [-.01, .10] | -.01 [-.06, .05] | .02 [-.04, .08] |
| Current Organization | .06 [.00, .12] | .06 [.00, .12] | .00 [-.06, .06] | .02 [-.04, .07] |
| Current Productiveness | .00 [-.05, .06] | .00 [-.06, .06] | -.01 [-.07, .04] | .02 [-.04, .07] |
| Current Responsibility | .05 [-.01, .10] | .04 [-.01, .10] | .00 [-.06, .06] | .02 [-.04, .07] |
| Current Emotional Stability | -.05 [-.10, .01] | -.02 [-.08, .04] | -.01 [-.07, .05] | -.03 [-.09, .03] |
| Current Anxiety | -.01 [-.07, .05] | .01 [-.05, .07] | -.02 [-.07, .04] | -.01 [-.07, .04] |
| Current Depression | .01 [-.05, .06] | .02 [-.04, .07] | .00 [-.06, .06] | -.01 [-.07, .05] |
| Current Emotional | -.11 [-.16, -.05] | -.08 [-.14, -.02] | -.01 [-.07, .05] | -.05 [-.11, .01] |

Note. **Bolded** portion indicated corresponding current trait-VPC trait pairs. $n = 7,863$ (i.e., those who reported an attempt to change their personalities). Due to the high sample size, correlations greater than .06 are significant at the $p < .001$ level.

Table 6b

Correlations between current Agreeableness (and facets) and VPC to increase Agreeableness (and facets)

| | VPC to Increase Agreeableness | VPC to Increase Compassion | VPC to Increase Respect | VPC to Increase Trust |
|-----------------------------|----------------------------------|----------------------------------|-------------------------------|--------------------------|
| Current Extraversion | .10 [.05, .16] | .06 [.01, .12] | .04 [-.01, .10] | .01 [-.05, .07] |
| Current Sociability | .10 [.04, .16] | .06 [.00, .12] | .05 [-.01, .11] | .01 [-.05, .07] |
| Current Assertiveness | .09 [.04, .15] | .04 [.00, .11] | .03 [-.03, .09] | .02 [-.04, .08] |
| Current Energy | .05 [.00, .11] | .04 [-.02, .10] | .02 [-.04, .08] | .01 [-.06, .05] |
| Current Agreeableness | -.08 [-.14, -.03] | -.05 [-.01, .01] | -.04 [-.10, .02] | -.04 [-.09, .02] |
| Current Compassion | -.05 [-.11, .01] | -.04 [-.02, .02] | -.02 [-.08, .03] | -.01 [-.06, .05] |
| Current Respect | -.09 [-.15, -.03] | -.05 [-.02, .01] | -.05 [-.11, .00] | -.02 [-.08, .04] |
| Current Trust | -.06 [-.12, -.01] | -.03 [-.02, .02] | -.02 [-.08, .04] | -.06 [-.11, .00] |
| Current Conscientious. | .04 [-.02, .09] | .04 [-.03, .09] | -.01 [-.06, .05] | .01 [-.05, .07] |
| Current Organization | .03 [-.03, .09] | .02 [-.04, .08] | -.01 [-.06, .05] | .02 [-.04, .06] |
| Current Productiveness | .05 [.00, .11] | .06 [-.02, .11] | .00 [-.06, .075] | .01 [-.05, .07] |
| Current Responsibility | .00 [-.05, .06] | .01 [-.04, .077] | .00 [-.06, .06] | .00 [-.06, .06] |
| Current Emotional Stability | -.04 [-.09, .02] | -.04 [-.08, .01] | .01 [-.06, .05] | .01 [-.05, .06] |
| Current Anxiety | -.05 [-.11, .01] | -.05 [-.06, .01] | .01 [-.06, .05] | .00 [-.05, .06] |
| Current Depression | -.05 [-.11, .01] | -.05 [-.08, .00] | .01 [-.07, .04] | .01 [-.04, .07] |
| Current Emotional | .01 [-.05, .06] | -.01 [-.06, .05] | .00 [-.05, .06] | .00 [-.06, .06] |

Note. Note. **Bolded** portion indicated corresponding current trait-VPC trait pairs. $n = 7,863$ (i.e., those who reported an attempt to change their personalities). Due to the high sample size, correlations greater than .06 are significant at the $p < .001$ level.

Table 6c

Correlations between current Conscientiousness (and facets) and VPC to increase Conscientiousness (and facets)

| | VPC to Increase Conscien- tiousness | VPC to Increase Organization | VPC to Increase Productiveness | VPC to Increase Responsibility |
|-----------------------|---|---------------------------------|-----------------------------------|-----------------------------------|
| Current Extraversion | .05 [-.01, .11] | .03 [-.02, .09] | .00 [-.06, .06] | .05 [.00, .11] |
| Current Sociability | .08 [.03, .14] | .05 [-.01, .11] | .03 [-.03, .09] | .06 [.00, .12] |
| Current Assertiveness | .02 [-.04, .07] | .02 [-.04, .08] | -.01 [-.07, .05] | .03 [-.03, .09] |
| Current Energy | .01 [-.05, .06] | .01 [-.05, .07] | -.03 [-.09, .03] | .04 [-.02, .10] |
| Current Agreeableness | .00 [-.06, .05] | .04 [-.02, .10] | -.03 [-.08, .03] | -.01 [-.06, .05] |
| Current Compassion | -.03 [-.08, .03] | .03 [-.03, .08] | -.04 [-.10, .02] | -.01 [-.07, .04] |
| Current Respect | -.04 [-.09, .02] | .02 [-.03, .08] | -.04 [-.10, .02] | -.02 [-.08, .03] |
| Current Trust | .04 [-.02, .10] | .05 [-.01, .11] | .01 [-.05, .07] | .01 [-.04, .07] |

| | | | | |
|-----------------------------|--------------------------|--------------------------|--------------------------|-------------------------|
| Current Conscientious. | -.16 [-.22, -.11] | -.07 [-.12, -.01] | -.16 [-.21, -.10] | -.02 [-.08, .04] |
| Current Organization | -.14 [-.20, -.08] | -.08 [-.13, -.02] | -.12 [-.18, -.07] | -.02 [-.08, .04] |
| Current Productiveness | -.14 [-.20, -.09] | -.05 [-.11, .01] | -.16 [-.21, -.10] | -.01 [-.06, .05] |
| Current Responsibility | -.11 [-.17, -.06] | -.03 [-.09, .02] | -.10 [-.16, -.05] | -.03 [-.09, .03] |
| Current Emotional Stability | -.09 [-.15, -.04] | -.05 [-.10, .01] | -.07 [-.13, -.01] | -.04 [-.09, .02] |
| Current Anxiety | -.09 [-.15, -.04] | -.04 [-.09, .02] | -.07 [-.12, -.01] | -.04 [-.10, .02] |
| Current Depression | -.09 [-.15, -.03] | -.06 [-.11, .00] | -.05 [-.11, .01] | -.05 [-.10, .01] |
| Current Emotional | -.06 [-.11, .00] | -.02 [-.08, .04] | -.06 [-.11, .00] | .00 [-.06, .05] |

Note. Note. Bolded portion indicated corresponding current trait-VPC trait pairs. $n = 8$, $n = 7,863$ (i.e., those who reported an attempt to change their personalities). Due to the high sample size, correlations greater than .06 are significant at the $p < .001$ level.

Table 6d

Correlations between current Emotional Stability (and facets) and VPC to decrease Negative Emotionality (and facets)

| | VPC to Decrease Negative Emotionality | VPC to Decrease Anxiety | VPC to Decrease Depression | VPC to Decrease Emotionality |
|-----------------------------|---|-------------------------------|-------------------------------|---------------------------------|
| Current Extraversion | .02 [-.04, .08] | .02 [-.04, .08] | -.04 [-.10, .01] | .06 [.00, .12] |
| Current Sociability | .02 [-.04, .07] | .01 [-.05, .06] | -.03 [-.09, .03] | .05 [-.01, .11] |
| Current Assertiveness | .01 [-.05, .07] | .02 [-.04, .07] | -.03 [-.09, .03] | .04 [-.02, .10] |
| Current Energy | .01 [-.04, .07] | .03 [-.03, .09] | -.05 [-.11, .01] | .06 [.00, .11] |
| Current Agreeableness | .00 [-.06, .06] | .02 [-.03, .08] | .02 [-.04, .07] | -.03 [-.09, .02] |
| Current Compassion | .05 [-.01, .11] | .05 [-.01, .11] | .03 [-.03, .09] | .00 [-.06, .06] |
| Current Respect | .00 [-.06, .05] | .03 [-.03, .08] | .02 [-.03, .08] | -.05 [-.11, .01] |
| Current Trust | -.03 [-.09, .02] | -.01 [-.07, .05] | -.01 [-.07, .05] | -.02 [-.08, .04] |
| Current Conscientious. | .04 [-.02, .10] | .06 [.01, .12] | -.02 [-.08, .04] | .02 [-.04, .07] |
| Current Organization | .02 [-.03, .08] | .06 [.00, .12] | -.03 [-.09, .03] | .00 [-.06, .06] |
| Current Productiveness | .04 [-.02, .10] | .05 [-.01, .11] | -.03 [-.08, .03] | .04 [-.02, .10] |
| Current Responsibility | .03 [-.03, .09] | .04 [-.02, .10] | .01 [-.05, .06] | .00 [-.06, .06] |
| Current Emotional Stability | .19 [.14, .25] | .11 [.06, .17] | .09 [.03, .14] | .09 [.03, .14] |
| Current Anxiety | .17 [.12, .23] | .15 [.09, .21] | .07 [.01, .12] | .05 [-.01, .11] |
| Current Depression | .15 [.09, .2] | .07 [.01, .13] | .11 [.05, .17] | .03 [-.03, .09] |
| Current Emotional | .17 [.11, .22] | .07 [.01, .13] | .04 [-.02, .10] | .14 [.08, .20] |

Note. Note. Bolded portion indicated corresponding current trait-VPC trait pairs; $n = 7,863$ (i.e., those who reported an attempt to change their personalities). Due to the high sample size, correlations greater than .06 are significant at the $p < .001$ level.

A few notable exceptions were found to the above relationships. In countries such as Slovakia and Germany, attempts to change specific personality traits were unrelated or even

slightly positively related to current, corresponding trait levels (see Supplementary Materials on osf.io/enrd4 for these relationships on the country level).

Discussion

Across 56 countries, 60.40% of college student participants reported that they are currently trying to change an aspect of their personalities. The sheer frequency of this goal around the world is notable in and of itself. Only nine countries had percentages lower than 50% (see Table 3). Nevertheless, there was substantial variation across countries, ranging from 81.91% (Thailand) to 21.41% (Kenya), and it is notable that the United States, the site of almost all previous research on this topic, had an unusually low percentage of people seeking to change their personalities (48.53%).

To explore the marked variation in VPC across countries, we ran supplementary analyses relating countries' VPC proportion with 35 existing country-level variables (e.g., GDP per capita, population density, individualism; see Supplementary Materials for a description of all country-level variables used in these analyses). We explored this question of country-level indicators predicting country-level VPC by (1) correlating country-level variables and VPC proportion, and (2) running a series of multi-level models predicting individual-level VPC from country-level indicators with accounting for country-level nesting. Of 35 potential correlates, none crossed the $p < .01$ threshold used throughout this study. Of 35 MLM models, only subjective health predicted VPC at the $p < .01$ level indicating that in countries with low subjective health, college students tend to report changing their personality traits, perhaps because cultural-level health serves as a reminder that personal change is warranted.

This relative lack of consistent country-level explanation for the variability of VPC may underscore the importance of internal and personal factors (e.g., individuals' happiness) rather

than external, country-level economic, social, or value factors in influencing whether someone is trying to change their personalities. See Table 1 of Supplementary Materials located at osf.io/enrd4/).

An alternative explanation for country variation in VPC is that mean-level country differences in known correlates of VPC (i.e., subjective happiness, interdependent happiness, negative emotionality, openness) are driving variation in VPC across countries. To explore this possibility, we ran a series of model fit comparisons to test whether country-level differences in the relationships between VPC and happiness, negative emotionality, and openness are accounted for by individual-level relationships. Specifically, we compared models in which mean country-level variables predict VPC with models in which both mean country-level and individual-level variables predict VPC. Results indicate that for all four variables, there were significant model fit comparison indicating that models with both country-level and individual-level predictors fit the data better than those with only country-level predictors. These results suggest that while mean level differences in country-level subjective happiness, for instance, predict VPC, an individuals' level of subjective happiness significantly contributes to this relationship. In other words, country-level variability in VPC is not entirely the bi-product of country mean-level differences in known correlates of VPC. Moreover, for subjective happiness and negative emotionality, there is a significant interaction between mean country-level and individual level factors suggesting that the relationship between subjective happiness and negative emotionality are stronger in countries with higher mean-levels of these variables. These results indicate that unhappy people, for instance, are motivated to change their personalities, especially when people in their cultural context are also unhappy (See Table 2 in the Supplementary Materials located at osf.io/enrd4/).

In the majority of countries (39 of 56), female participants reported personality change attempts at a higher rate than their male counterparts. Despite this consistent trend, women were only *significantly* more likely to report personality change attempts in five countries (see Table 3). Moreover, men reported change attempts at a higher rate than women in only one country (The Netherlands).

Overall, the majority of participants around the world indicated that they were trying to change their personalities, in almost all cases to be either more emotionally stable, conscientious, extraverted or agreeable. Similar to Robinson et al. (2015), increased emotional stability was the most frequently targeted trait across the vast majority of countries. Another internationally consistent finding was that individuals who scored high in traits generally considered maladaptive, such as negative emotionality and its facets anxiety, depression and emotional volatility, and those lower in happiness were more likely to report attempting to change their personality (i.e., answering “yes” to the VPC question). We observed some indication that individuals high in openness (driven by intellectual curiosity) were likely to report attempting personality change, although this relationship varied somewhat across countries, it was relatively small, and thus should be replicated. Putting these findings together, it appears to be that open-minded individuals who think deeply about their own maladaptive traits and difficulties in general well-being may be the ones most likely to make active efforts towards changing their personalities, in an attempt at emotional self-improvement. It might also be the case that individuals high in openness to experience have a predisposition to explore new ways to improve themselves even in the absence of low levels of wellbeing or emotional stability. To test this possibility, we ran a generalized linear-regression model predicting whether individuals report changing *any* trait, from the interaction between negative emotionality and openness. Results

from these follow-up analyses reveal that for individuals with higher levels of openness, the relationship between negative emotionality and VPC is stronger relative to those with lower levels of openness ($B = .10, p = .03$). The same pattern was not observed when predicting VPC from the interaction between subjective happiness and openness ($B = .006, p = .83$). It should be noted that the significant interaction effect reported above is relatively small and should be interpreted with caution and replicated in future VPC investigations.

While the direction of the relationship between interdependent happiness and VPC was consistent across the vast majority of countries, the strength of the relationships did vary somewhat. For instance, in Australia and Slovenia the relationship between current levels of agreeableness and VPC was strongly positive, in Macedonia and Greece it was strongly negative, and in the majority of countries (e.g., Georgia, Spain, Canada), it was near zero. Likewise, while the average relationship between religiosity and VPC was close to zero, in countries like Macedonia and Latvia, the relationship was strongly negative and in countries like India and the Czech Republic, the relationship was strongly positive. Indeed, in the case with religiosity, there was significant variation across countries in its relationship with VPC. This lack of consistency in the relationship between some individual differences and VPC highlights the cross-cultural variation present in the volitional personality change process and underscores the importance of investigating mechanisms of personality change outside a single country.

We next assessed the relationship between current personality traits and *specific* volitional personality change attempts. Conceptually replicating previous research, when all participants were treated as one world sample, current levels of extraversion, conscientiousness and negative emotionality are all strongly related to their corresponding VPC trait attempts. For instance, individuals with low levels of extraversion tended to report that they were currently

trying to increase levels of extraversion (primarily driven by attempts to increase levels of sociability). Additionally, with the exception of Emotional Stability, these relationships were driven primarily by one facet, such as sociability for extraversion and productivity for conscientiousness.

Increasing the generalizability of volitional personality change

The greatest contribution of the current study might be its generalization of previously reported correlates of VPC effects outside the US. Specifically, when participants are treated as one world sample, findings from this study overlap considerably from that of previous research conducted in the US (Hudson & Roberts, 2016, Baranski et al. 2017, 2020). However, comparing trends within the US data against other countries illuminates the value of this endeavor. For instance, the US was among the lowest in the percentage of individuals indicating a current attempt to change their personalities. In fact, the United States was one of only seven countries with volitional change percentages below 50%. Moreover, the US was in the top five countries with percentages of attempts to increase extraversion and in bottom ten countries with percentages of attempts to increase emotional stability. Finally, previous research, with samples from the US, has demonstrated the tendency for current levels of agreeableness to be *unrelated* to attempts or desires to increase agreeableness (Baranski et al., 2017; Baranski et al., 2020). In the current study, we again observe this trend in the US, however in over a dozen other countries there was a strong, inverse relationship between current levels and attempts to increase agreeableness. Thus, in several instances, the US is more an exception than the norm, and the disproportionate reliance on US samples in psychological research risks seriously mischaracterizing the mechanisms of VPC among, perhaps, other psychological phenomena.

That said, the current research does support the generalization of several other associations with VPC. First and foremost, the majority of individuals in the 56 countries included in the current study indicated that they are currently attempting to change some aspect of their personalities. Most commonly, students are trying to increase emotional stability, extraversion, conscientiousness and agreeableness. Finally, our world sample replicated the trend for individuals to desire or actively attempt to increase the socially desirable traits in which they perceived themselves lacking. Thus, despite differences in traditions, customs, and values, these previously reported correlates of VPC are consistent around the world. Taken together, the current project both cautions against the reliance on strictly US samples in assessing volitional personality change, and successfully generalizes many of the previously reported effects to individuals across 56 countries (see Heine et al., 2006).

Limitations and future directions

The current study is the first to assess VPC in students across dozens of countries around the world. But it is not without its limitations. First and foremost, while participants were sampled from a large number of countries across 6 continents, the relatively small samples sizes within some countries limit the extent to which we can generalize our findings to everyone residing in each country. Thus, we caution readers in over-interpreting between-country differences. Relatedly, all 56 country samples involved college community participants, and most of them female. Importantly, exclusive use of college samples effectively controls for various social and demographic factors and assesses individuals during a particularly transformative time in their lives that may be especially prone to active efforts towards self-improvements. It does, however, also limit the degree to which we can generalize our findings outside educated populations. Moreover, while previous work has found that VPC goals were not

557 impacted by age (Baranski et al., 2017; Hudson & Fraley, 2016), students' self-improvement
558 goals and motivations may be more distinct from adults in some countries compared to others.
559 Future work should assess differences in VPC across various age groups by including
560 community samples across various countries.

561 A second limitation is the scope by which VPC was assessed. Only two questions (e.g.,
562 "Are you currently trying to change an aspect of your personality?", and for those who answered
563 in the affirmative, "What are you trying to change?") measured this complex psychological
564 concept. It might be important, for instance, to know how participants feel about their personality
565 change goal (e.g., Do they think it is attainable? How long have they been working towards
566 accomplishing this goal?), why they are trying to change their personalities, and in what social
567 context their personality change goal is most relevant. Future work should seek to understand
568 country variation in the motivation for and conceptualization of VPC by incorporating deeper
569 assessments. Relatedly, our reliance on yes/no open-ended questions may limit our ability to
570 distinguish the strength of the pursuit towards volitional personality change. Future research
571 should use a combination of open-ended and Likert-type measurements to provide a more
572 comprehensive assessment of volitional personality change, although researchers should be
573 careful in light of known cultural response biases of Likert-type scales Heine et al., 2002,
574 Johnson et al, 2005; Smith et al., 2016).

575 Next, future longitudinal assessments of VPC across countries are important for two
576 reasons. First, while investigations of personality development using longitudinal designs have
577 become relatively common in the US (Roberts & Mroczek, 2008; Roberts et al., 2006; Robins et
578 al., 2001), there are very few studies in which longitudinal assessment is conducted across
579 various countries. Secondly, in the context of understanding more about the individual's active

effort towards personality change, it is imperative to assess whether they are more or less successful in their pursuit and whether this success varies across countries. It may be the case, for instance, that particular aspects of one's culture facilitates or impedes progress towards desired personality change. The present study did not find it feasible to seek repeated measurements of the same individuals in 56 countries, but future studies should seek to do so.

A final limitation of the current study is its reliance on self-report measures. Self-report measures are useful in tapping the internal qualities of individuals and have relatively low cost. However, future research in VPC should combine self-report methods with measurement tools that assess personality change attempts as they pertain to individuals' observed behavior in everyday life (see Steiner et al., 2020).

General conclusions

Across 56 countries, the similarities in VPC around the world are robust. The majority of college students from the majority of countries indicated that they are currently trying to change their personalities, and their specific attempts are related to traits they currently lack. This widespread motivation underscores what may be a nearly universal human drive towards self-improvement. Furthermore, we are beginning to uncover the personality profile of college students who are actively seeking personality change. Specifically, those students who reported higher levels of negative emotionality, lower happiness and high openness were the most likely to report attempting personality change. College students around the world tended to seek to increase aspects of themselves that they lack. Despite many social, political, and religious differences around the world, the current project suggests that a basic human drive towards adaptive personality change is nearly universal.

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