

Difficulty-as-Improvement: The Courage to Keep Going in the Face of Life's Difficulties

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Abstract

When a task or goal is hard to think about or do, people can infer that it is a waste of their time (difficulty-as-impossibility) or valuable to them (difficulty-as-importance). Separate from chosen tasks and goals, life can present unchosen difficulties. Building on identity-based motivation theory, people can see these as opportunities for self-betterment (difficulty-as-improvement). People use this language when they recall or communicate about difficulties (autobiographical memories, Study 1; “Common Crawl” corpus, Study 2). Our difficulty mindset measures are culture-general (Australia, Canada, China, India, Iran, New Zealand, Turkey, the United States, Studies 3–15, $N = 3,532$). People in Western, Educated, Industrialized, Rich, Democratic (WEIRD)-er countries slightly agree with difficulty-as-improvement. Religious, spiritual, conservative people, believers in karma and a just world, and people from less-WEIRD countries score higher. People who endorse difficulty-as-importance see themselves as conscientious, virtuous, and leading lives of purpose. So do endorsers of difficulty-as-improvement—who also see themselves as optimists (all scores lower for difficulty-as-impossibility endorsers).

Keywords

culture, self and identity, identity-based motivation, difficulty mindsets, optimism, conscientiousness, character virtues, and meaning in life

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When a task or goal feels hard to think about or do, people can infer from this something about themselves. Maybe their odds of succeeding are low (so investing is a waste of time, termed difficulty-as-impossibility). Perhaps, the task or goal is valuable to them (an identity-congruent thing to do, termed difficulty-as-importance). People have both difficulty mindsets available in memory but differ in how much they endorse each (Fisher & Oyserman, 2017). Shifts in context can make either more top of mind (Oyserman et al., 2018), and cultures may shape how much each is chronically accessible (O'Donnell et al., 2022). At the same time, people can experience difficulties that they do not see as task or goal related—their life can be tough to endure due to circumstances beyond their control. People can choose their goals, but not whether to have a sick parent or not to live during an economic downturn. At the same time, just as people can infer something about themselves when it feels hard to think about or work on the tasks and goals they chose for themselves, they can draw inferences about themselves from how they respond to these experiences of unchosen difficulties. Indeed, we predict that people may infer that experiencing life difficulties can be self-bettering, which we term having a difficulty-as-improvement mindset.

In the current article, we synthesize a culture-based and identity-based motivation (IBM) theory (Oyserman, 2009) to examine the inferences people draw about their identities from their difficulty mindsets (difficulty-as-importance, difficulty-as-impossibility, difficulty-as-improvement). We focus on those aspects of their identities that we term identities of resilience—four facets of identity associated with coping with adverse situations. Cross-culturally, these commonly include being ethical, optimistic, finding purpose, and persevering (Everly et al., 2012; Greeff & Ritman, 2005; Lecic-Tosevski et al., 2011; Massicotte, 2021; Muki, 2021). We operationalize these with measures of character virtues, optimism, meaning in life, and conscientiousness. Cross-cultural literature suggests that seeing oneself in this light can

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be motivating and helpful. Before we detail our predictions and measures, we first outline what we mean by a culture-based approach to IBM.

IBM Theory

IBM is a social psychological theory of self-regulation, motivation, and goal pursuit (Oyserman, 2007). It predicts that people construct their identities based on both what they are thinking about (the content of their thoughts) and how thinking feels (the inferences they draw from their metacognitive experiences) while considering or engaging in tasks and goals (Oyserman, 2007; Oyserman et al., 2012, 2017). People draw inferences about who they are and could become from their experiences of ease and difficulty thinking (Oyserman et al., 2007). When it feels hard to think about or work on a task or goal, that difficulty signals that succeeding at it is important to them, a “me” or “us” thing to do (termed difficulty-as-importance). It can also signal that the odds of their succeeding at the task or goal are so low as to make persistence a waste of their time (termed difficulty-as-impossibility). People hold both difficulty-as-importance and difficulty-as-impossibility mindsets but differ in how much they endorse each (Fisher & Oyserman, 2017). IBM theory predicts a recursive link between how people interpret their experiences of difficulty thinking about or working on tasks or goals and the content of their task-oriented identities (Oyserman, 2007, 2009, 2015). Studies demonstrate this recursive relationship by using autobiographical recall and other ways to make a difficulty mindset (difficulty-as-importance or difficulty-as-impossibility) or a task-oriented identity salient. For example, students are less confident that academics are central to their current or future possible identities when a difficulty-as-impossibility rather than a difficulty-as-importance mindset is salient (e.g., Aelenei et al., 2017; Smith & Oyserman, 2015). The reverse is also the case, salient academic future identities affect how much students endorse each difficulty mindset (Oyserman et al., 2015).

Expanding IBM

We suggest expanding IBM in two ways. First, from a focus on identities linked to tasks and goals (as a good student, as healthy) to identities of resilience (as optimistic, conscientious, virtuous, and leading a life of purpose). Second, from a focus on difficulties associated with thinking about or working on chosen tasks and goals to include life difficulties—difficulties that must be endured rather than chosen or discarded. In doing so, we draw on the cultural psychology literature detailed below to suggest that people have a difficulty-as-improvement mindset available in memory. We expect that people can consider succeeding in a task to be identity-congruent (difficulty-as-importance) or incongruent (difficulty-as-impossibility) and can consider engaging with difficulty to be character building (difficulty-as-improvement), separate from whether they succeed or not.

Culture-Based Approaches to Life Suffering

Each society provides people with a set of implicit blueprints for how to make sense of their experiences; this set of blueprints together form its culture (Oyserman & Yan, 2019). Having a blueprint helps people know what to expect—what ought to happen moment-to-moment and over time. It clarifies how culturally valued identities should be instantiated (Yan & Oyserman, 2018), in what order, and when (Berntsen & Rubin, 2004; Gelfand & Jackson, 2016). Following the normative way of being and experiencing life events feels fluent and socially valued (Oyserman, 2017). One way people experience life difficulties is that their lives fail to fit this normative order and timing of life events. Yet, if cultures provide a blueprint, part of it should address how to make sense of suffering in this and other ways. We infer that such a culture-based blueprint can highlight deficiency, but it can also highlight culturally sanctioned ways forward. We consider three culture-based blueprints—deservingness, higher authority, and conservatism that are likely to be culture-general—found in diverse societies. As we note, the first and last blueprints provide explanations that may leave people feeling that difficulties are justified while the higher authority blueprint highlights a culturally sanctioned way forward—the possibility that suffering has meaning without assigning blame.

Deservingness. Deservingness culture-based blueprints imply that peoples’ actions, qualities, or situation merit rewards or claims, and hence, people experiencing suffering might be experiencing the consequence of their actions and deserve the outcomes they attain. If that is the case, then the way things are is moral (Ellemers et al., 2019; Jost et al., 2003; Sengupta et al., 2015). We include in this category just world beliefs—that the world is fair, and people get what they deserve (Furnham & Gunter, 1984; Lipkus et al., 1996), and karma beliefs—past actions cause current circumstances (White & Norenzayan, 2019; White et al., 2019). Karma, as detailed below, is central to Hindu belief systems. Both just world and karma are congruent with the idea that good things happen to good people and bad people suffer dire consequences (Feather, 1992; Lupfer & Gingrich, 1999). If people get what they deserve, their life course reflects their character. Successful people have good qualities; people who suffer do not. Deservingness blueprints imply that life difficulties are self-made but do not point to a positive aspect of suffering.

Higher Authority. In contrast, some culture-based blueprints for making sense of suffering do so. Here, we focus on spiritual and religious beliefs in which a higher authority provides a guide or even preordains the broad course of lives—life unfolds according to God’s plan (Lupke, 2005). People can draw on these beliefs to understand (Stevenson & Haberman, 1998) and even find meaning in suffering (Bowker & Bowker, 1975; Frankl, 1946; Jonas & Fischer, 2006). Believers can

find that suffering has a potentially positive purpose of testing and purifying those who experience it unbidden (Gray & Wegner, 2010). The alternative—that suffering is purposeless and happens even despite living a morally correct life—upsets the moral blueprint for order (Cook, 1979; Lupke, 2005). Public and private welfare re-establishes this order by limiting help to those deemed to have lived a morally correct life (Hansen, 2019; Katz, 1989; Rasinski, 1987). Indeed, it is not difficult to find examples of theodicy—spiritual or religion-based explanations for why good people suffer and how it can lead to betterment (though we are not claiming that people take up these belief systems instrumentally).

To concretize the idea of a higher authority blueprint, we consider some links between suffering and improvement from Western and Eastern religious beliefs, teachings and rituals. For example, in Judaism, some scholars argue that God inflicts pain and suffering on the righteous to improve them (Schwartz, 1983). The Jewish prophet Isaiah says that loyally serving God may yield suffering and feeling crushed but that this provides moral rewards—a portion among the great (New International Version Bible, 2011, Isaiah 53:10–11). Christian beliefs also highlight the benefits of suffering—St. Paul describes Christians as glorying in their sufferings because they know suffering produces perseverance and that perseverance improves the character and hence a sense of hope (New International Version Bible, 2011, Romans 5:3–4). In Islam, pain and suffering provide a means for growth—the influential Muslim poet Rūmī describes pain and suffering as antecedents of spiritual growth and redemption (Chittick, 1983). In Buddhism, one of the four Noble Truths is that pain and suffering are inescapable and central to existence (Harvey, 2012; Singh, 2022). Acknowledging this makes people purer and stronger (Harvey, 2012). This idea is core to the Dalai Lama's (1995) statement that “The person who has had more experience of hardships can stand more firmly in the face of problems than the person who has never experienced suffering. From this angle, then, some suffering can be a good lesson for life.” Hindu belief suggests that people can atone for moral transgressions in current or past lives by embracing the experience of suffering (Thrane, 2010; Whitman, 2007). In some Hindu traditions, suffering can yield self-liberation (Herman, 2018).

Rituals support and reinforce these beliefs. People familiar with their religion's rituals or the rituals of the religion common in their society may experience the idea of difficulty as improvement as fluent and natural because these rituals often entail fasting and self-induced suffering as paths to self-improvement. On the Day of Atonement, the Jewish tradition is to abstain from eating, drinking, and other physical pleasures to remove oneself from mundane thoughts and actions to better concentrate on the ideals of Judaism and reconcile oneself with God (Goodman, 2018). During Ramadan, the Muslim tradition is to abstain from food and water from sunrise to sunset to purify the self and increase self-discipline and compassion for impoverished people

(Azizi, 2010). During Lent, the Christian tradition is to abstain from some pleasure to recall how Jesus fasted in the wilderness (Britannica, 2020). The Hindu tradition entails accepting the pain of life (Whitman, 2007). These widespread religious traditions rest on the notion that living with difficulty purifies the soul and brings one closer to God.

Conservatism. The third culture-based blueprint for making sense of suffering is conservatism. People who endorse conservative beliefs (e.g., traditional values and ideas) assume that things are the way they are for a reason. This belief allows them to make sense of suffering—people who suffer deserve it because of their shortcomings. In this way, conservatism is compatible with deservingness beliefs. Conservatives believe that the world is a fair place in which people are responsible for themselves (Carney et al., 2008), the lazy fail (Feather, 1984; Furnham & Bland, 1983), and people get what they deserve (Furnham & Gunter, 1984). They see the current social organization and structure as the right ones (Jost & Banaji, 1994; Jost et al., 2004). Hence, they are less interested in social change (Wakslak et al., 2007). People who endorse conservatism respect authority, moralize ingroup loyalty (Graham et al., 2009), and believe that fairness entails receiving in proportion to deservingness (Haidt, 2012; Rai & Fiske, 2011; Skitka & Tetlock, 1993; Skurka et al., 2020). In this way, conservatism is also compatible with and often part of religious and spiritual beliefs (Reynolds et al., 2020).

Less-WEIRD and WEIRD-er Societies

We have described three common culture-general blueprints for making sense of suffering. We now consider two ways these culture-general processes can also be culture-specific. We organize these differences in terms of a parcel of features summarized by Henrich and colleagues (2010) as WEIRD (Western, Educated, Industrialized, Rich, Democratic, see also Henrich, 2020). For ease, we contrast less with more WEIRD cultures. The first culture-specific process is how much people are likely to endorse difficulty-as-improvement. Cultures differ in how the three blueprints to explain suffering (deservingness, higher authority, and conservatism) are accepted or at least accessible. People in less-WEIRD cultures tend to be more likely to apply karma and just world beliefs (Furnham, 1993; White et al., 2019) and to be more religious (Pew Research Center, 2018) and conservative (Stankov, 2017). These three blueprints can remain accessible even after a substantial percentage of the population in a particular society no longer identifies as members of a religion. Consider the case of China—culture-based spiritual beliefs rooted in Buddhism, Daoism, Confucianism, and folk religions permeate Chinese worldviews (Arthur, 2019). Though few Chinese people identify as Buddhist, many more pray to Buddhas and most affirm Buddhist concepts of causal retribution and karma (Yao & Badham, 2007).

Table 1. Hypotheses and Studies Testing Them.

Number	Hypothesis Content	Study number
H1	When people talk about difficulty, they use terms related to importance, impossibility, and improvement	1 and 2
H2	Difficulty-as-improvement can be reliably measured across societies ^a	3–15
H3	People in less-WEIRD societies endorse difficulty-as-improvement more than those in WEIRD-er societies	3–15
H4	People who endorse difficulty-as-improvement find themselves to be conscientious, virtuous, optimistic, and leading a life of meaning	3–13
H5	H4 is robust—significant after accounting for difficulty-as-importance and difficulty-as-impossibility ^b	3–13
H6	People who believe in karma and a just world and who are religious, spiritual, and conservative endorse difficulty-as-improvement more ^c	14, 15

Note. WEIRD = Western, Educated, Industrialized, Rich, Democratic.

^a We also verified that difficulty-as-importance and difficulty-as-impossibility show MI by combining data from Studies 3 to 15 with previously published data from O'Donnell et al. (2022). ^b We also tested robustness by controlling for the fixed mindset of intelligence (Dweck et al., 1995). ^c We first determined if karma and just world items, and religiosity and spirituality items are best considered one or two factors each.

Because each blueprint shapes how much people infer that life difficulties can support personal growth, we expect that how much people endorse difficulty-as-improvement will be culture-specific.

The second culture-specific process is the reasoning style that is chronically accessible. Chronically accessible reasoning style differs between less and more WEIRD cultures (e.g., Ji et al., 2001; Oyserman et al., 2002, 2009; Peng & Nisbett, 1999; Talhelm, 2020). We draw on this literature to make two predictions. First, because they apply rules and “either-or” logic in reasoning, people in WEIRD-er societies are more likely to infer that if one explanation is true other ones cannot be. Second, because they are more likely to apply family relationships, context-based explanations, and “both-and” logic in reasoning, people in less-WEIRD societies are less likely to use judged truth of one explanation to infer that of another. Therefore, they may be more likely to simultaneously endorse various interpretations of difficulty (i.e., the correlations among them should be of a lower magnitude than in WEIRD-er ones).

The Current Studies

We test and report the results of six predictions (H1–H6). Studies focused on H1 (Studies 1 and 2) each use a distinct methodology. In contrast, we use the same method across each of the studies focused on H2 to H6. For clarity, we report separately on our Studies 1 and 2 and present our other studies together with a single methods description, analysis plan, and results summary. We detail our predictions below and in Table 1, which provides our prediction summaries and the studies that tested them.

Hypothesis 1 (H1): People use each of the three interpretations of difficulty (difficulty-as-improvement, difficulty-as-importance, and difficulty-as-impossibility) in natural language. Study 1 shows that difficulty-as-improvement, difficulty-as-importance, and difficulty-as-impossibility

are available in memory and can become accessible with simple memory triggers. Study 2 supports the ecological validity of difficulty mindsets by showing that people use words for difficulty in proximity ones for importance, impossibility, and improvement in the English corpora.

Hypothesis 2 (H2): Difficulty-as-improvement is a culture-general idea in two ways. First, people across societies tend to endorse difficulty as improvement, and second, as indicated by indices of measurement invariance (MI), this idea can be measured reliably.

Hypothesis 3 (H3): Difficulty-as-improvement is rooted in society-level culture. People endorse difficulty-as-improvement more in less-WEIRD societies (China, India, Iran, and Turkey) than in WEIRD-er ones (Australia, Canada, New Zealand, and the United States).

Hypothesis 4 (H4): Difficulty-as-improvement matters. People who endorse difficulty-as-improvement see themselves as conscientious, virtuous, and optimistic people living a life of meaning.

Hypothesis 5 (H5): H4 is robust to control how much people endorse difficulty-as-importance and difficulty-as-impossibility.

Hypothesis 6 (H6): Difficulty-as-improvement is culture-based. People who endorse difficulty-as-improvement believe more in karma and a just world. They are more religious, spiritual, and conservative.

H1: Study 1

Sample and Methods

Undergraduates (the University of Southern California, $n = 165$; the University of Texas at Austin, $n = 342$; total $N = 507$, 64% female, $M_{age} = 19.54$) received subject pool course credit to participate in a two-part (manipulation, autobiographical response) 10-minute cultural imagination study. In the experimental manipulation, students read one of four parallel texts (difficulty-as-improvement, difficulty-as-importance,

difficulty-as-impossibility, control) about a culture. We asked them to imagine living in that culture (full texts, Supplemental Materials, example responses Table S1). Students randomly assigned to the difficulty-as-improvement condition read about a culture where people see the difficulties and hardships they go through in life as chances to self-improve, mature, and build character. Those in the difficulty-as-importance condition read about a culture where people see difficulties with tasks and goals as implying their importance. Those in the difficulty-as-impossibility read about a culture where people see task or goal difficulty as meaning they should switch to something else. Students in the control condition imagined living in a different culture and described an experience in this culture. The control text did not mention difficulty. Control recall instructions focused on when they understood their difficulty in the way of people in that culture.

Preliminary Analysis: Content Coding

The second and third authors agreed on a content-coding plan, coded 10%, discussed discrepancies to an agreement, and completed the coding. First, they coded responses for whether they described a difficult experience (no, yes) and coded “Yes” responses as (a) task or goal or (b) life. Then, they coded task or goal responses into four groups: (a) increased task or goal value, (b) increased effort, (c) shifting to an easier way to attain the goal or do the task, or (d) quitting the task or goal. In exploratory coding, they coded the domain in which difficulty occurred (e.g., school or work, relationships, finances, physical or mental health, or hobbies). Content domain results are in Supplemental Materials.

Results and Discussion

Supporting H1, 92% to 99% of respondents randomly assigned to an experimental condition recalled a congruent difficulty (only three difficulty-as-importance and five difficulty-as-impossibility condition responses were too vague to code). In the difficulty-as-improvement condition ($n = 129$), 98.4% described a life difficulty. In the difficulty-as-importance condition ($n = 126$), 92.1% described difficulty with a task or goal, as did 98.4% of difficulty-as-impossibility condition participants ($n = 125$). In the difficulty-as-importance condition, people described task or goal-related difficulty as a reminder of its value (83.3%) or stirring them to effort (14.3%). In the difficulty-as-impossibility condition, people described difficulty as a reason to try an easier way to attain their initially desired goal (22.4%) or quit working on that goal and find another one (73.6%). In the control condition ($n = 127$), 26.8% of people spontaneously mentioned difficulty. We infer that interpretations of difficulty are available in memory—people can generate autobiographical memories relevant to difficulty-as-improvement, difficulty-as-importance, and difficulty-as-impossibility.

Even without a prompt (control condition), people may report their experiences in terms of difficulties. In Study 2, we apply an alternative method—analyses of a large corpus of natural language.

H1: Study 2

Sample and Methods

Our sample was the “Common Crawl” corpus (<http://commoncrawl.org>), which contains snapshots of all publicly scrapable text from the Internet, totaling more than 630 billion words in English. Our method, word embeddings, creates vectors to map the meaning of concepts in a high-dimensional space by using neural network models to represent the meaning difference (Mikolov et al., 2013). We generated 100-dimensional word vectors using the “FastText” algorithm (Bojanowski et al., 2017). Like Word2vec, FastText generates vectors using context-based representations in which character strings (words or subwords) are represented based on the contexts in which they most commonly occur (Mikolov et al., 2013). The distance between the vectors representing each word set pair in a high-dimensional space (e.g., cosine similarity between vectors representing those concepts) reflects common usage patterns. In large corpora like ours, these similarities capture co-occurrence and the intrinsic linguistic relationships among words (e.g., synonyms, relationships among tenses for a verb, Atari & Dehghani, 2022).

Analysis Plan

We based our analyses on how close words related to difficulty were to words related to importance, impossibility, and improvement. Because contiguity is a relative measure, we created a high (variants of the word difficulty) and a low benchmark (words irrelevant to difficulty, importance, impossibility, or improvement) as comparisons. Before examining the corpus, we developed face-valid 15-word sets of difficulty (e.g., “difficulty,” “hardship,” and “adversity”), importance (e.g., “important,” “valuable,” and “worthwhile”), impossibility (e.g., “impossible,” “unlikely,” and “pointless”), improvement (e.g., “self-improvement,” “character building,” and “self-discipline”), variants of the difficulty word set (high benchmark, e.g., “difficulties,” “challenging,” and “hardships”), and words irrelevant to difficulty or any of our constructs (low benchmark, e.g., “banana,” “word,” and “gray.”). We share each set in full in Supplemental Materials, Table S2. We formed a distribution by calculating the cosine similarity of each word in each category against all the words in the difficulty word set. We used a one-way analysis of variance (ANOVA) to examine the difference between these distributions. We adjusted for pairwise comparisons using the Holm method.

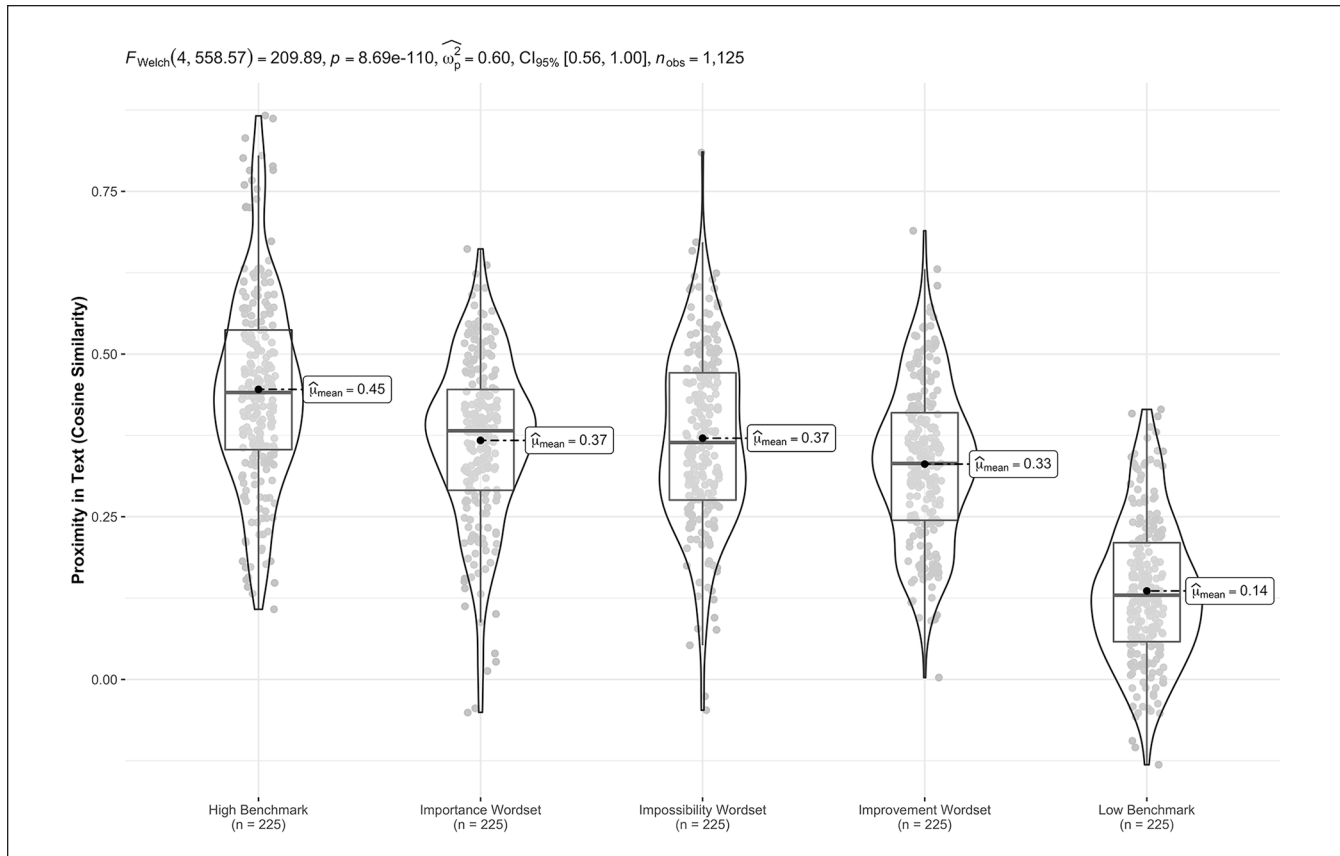


Figure 1. Study 2: Proximity of Difficulty Words to Importance, Impossibility, and Improvement Words as Compared With High and Low Benchmark Words (Cosine Similarity Analyses).

Results and Discussion

Results support H1. As we graphically depict in Figure 1, the average cosine similarity of the proximity in which people use words representing difficulty to ones representing importance, impossibility, and improvement ranges from 0.33 to 0.37. Descriptively, this is closer to the high benchmark upper bound of 0.45 than the low benchmark lower bound of 0.14, implying that when people communicate about difficulty, they also use words representing importance, impossibility, and improvement. Not surprisingly, our high benchmark is closer, and our low one is farther in proximity than our words about importance, impossibility, and improvement. That is, people use words in the high benchmark set at closer proximity to the difficulty word set ($\text{pads} < .001$) and those in the low benchmark set at farther proximity to the difficulty word set ($\text{pads} < .001$). Difficulty word set words are just as proximate to importance as to impossibility word sets ($\text{padj} = .99$). People use these words in equal proximity to ones about difficulty. The proximity of each word set to difficulty is higher than that of improvement words to difficulty ones (compared with impossibility, $\text{padj} = .027$, to importance, $\text{padj} = .032$). We interpret our results as implying that people talk about difficulty using terminology

reflecting impossibility, importance, and improvement (though the latter to a slightly lower extent).

Studies 3 to 15

Sample and Methods

Open Science. We present our measures in Supplemental Materials and our preregistrations, data, and analysis scripts in our Open Science Framework: https://osf.io/yqn3k/?view_only=819f1078d311485498c8b096eb653b5d.

Sample. We recruited adults from eight countries (Studies 3–15, total $N = 2,380$). We summarize our sample descriptive information in Table 2 (which also notes preregistrations). Our predictions required different sample sizes. We detail the rationale for our sample size for each prediction next.

H2 tests measurement reliability and invariance—Chen and colleagues (2008) suggest a minimal sample size of 100 per group. We obtained samples of 123 to 750 per group—totaling 2,380 for difficulty-as-improvement and 2,870 for difficulty-as-importance and difficulty-as-impossibility. H3 to H6 test associations. To detect small-to-medium correlations ($r = .20$ – $.25$) with .80 power, we aimed to collect data from

Table 2. Description of Study Samples Testing Hypotheses 3 to 6.

Study	Source	Country	N	Age M (SD)	% Female	Preregistered
3	Prolific	Australia	135	30.37 (10.07)	48	No
4	Prolific	Canada	135	31.42 (10.88)	48	No
5	Prolific	New Zealand	135	35.21 (10.51)	47	No
6	Prolific	United States	202	31.95 (11.01)	46	No
7	Prolific	Australia	135	30.03 (9.84)	49	No
8	Prolific	Canada	135	32.10 (11.27)	48	No
9	Prolific	New Zealand	135	34.87 (10.78)	49	No
10	Prolific	United States	202	33.54 (12.67)	50	No
11	Convenience (social media)	China	123	41.65 (12.23)	46	Yes
12	Convenience (social media)	Iran	201	34.94 (8.32)	69	Yes
13	Snowball	Turkey	188	43.48 (11.91)	45	No
14	Amazon MTurk	India	308	34.31 (8.70)	27	Yes
15	Prolific	United States	346	34.21 (13.25)	56	Yes
Secondary analyses	O'Donnell et al. (2022)	China	365	29 (13)	63	No
Secondary analyses	O'Donnell et al. (2022)	India	397	31.5 (6)	39	No
Secondary analyses	O'Donnell et al. (2022)	United States	390	41 (11)	50.5	No

Note. Studies 3 to 10 reimbursed people 0.80 USD. To reduce the participant burden, people were randomly assigned a survey (conscientiousness and character virtues or optimism and meaning in life). Studies 11 to 13 provided no monetary reimbursement. Sending funds to Iran is illegal given U.S. Department of Treasury sanctions and is complicated in Turkey and China. Studies 14 to 15 reimbursed people 1.00 USD.

135 participants per sample in our initial studies (Australia, Canada, and New Zealand, Studies 3–5 and 7–9). Based on our results, we aimed to collect data from 200 participants to detect all but the smallest effects in our subsequent studies (the United States, China, Iran, and Turkey, Studies 6 and 10–13). H6 also tests associations. We conducted a pilot study, which yielded an estimated effect of .15. We aimed to collect data from 350 participants in Studies 14 and 15 (conservative given that detecting this sized coefficient with .80 power and alpha of .05 requires a sample of 280).

Method

Scale Development. We developed the difficulty-as-improvement scale before starting data collection. First, we generated 20 face-valid statements drawing from religious beliefs and the Protestant Work Ethic scale (which translates a particular aspect of the Protestant faith into the idea that work has value in itself; Feather, 1984; Furnham & Bland, 1983). Then, we conducted two pilot studies ($N = 749$ adults from Amazon Mechanical Turk) to examine the psychometric properties of these items. Next, we used exploratory factor analyses. Results supported our intuition that the 20 statements loaded onto a single factor (see Figure S1 and Table S5 in Supplemental Materials; loadings ranged from 0.47–0.78). We chose the four highest loading statements to construct our scale. We solicited feedback from colleagues who noted that the religious wording of our scale items would make it impossible for nonreligious people to respond. Hence, we reworded our scale items to be secular (see Table S5 in Supplemental Materials for both versions of each statement). For example, “In a way, the struggles I have today are purifying my character to meet tomorrow’s

challenges” became “In a way, the struggles I have today are strengthening my character to meet tomorrow’s challenges.” We created translations from English to Chinese (Simplified), Farsi, and Turkish with the assistance of other native speakers and checked for clarity via back translation.

Survey Protocol. We programmed our surveys in Qualtrics, except for Study 12, which took place in Iran. Qualtrics does not provide service to Iranian servers, so we used Google Forms instead. In each study, we welcomed participants, provided study information, obtained consent, presented our measures, and ended with basic demographics (age, gender).

We varied block order somewhat across studies: In Studies 3 to 10 (Australia, Canada, New Zealand, and the United States) and 13 (Turkey), we randomized block order (difficulty mindsets, conscientiousness, character virtue, and meaning and life and optimism) and items within each block for each participant. In Study 11 (China), we simplified our procedure to a two-block randomized order with outcome items in one block and our difficulty mindset in the second block. In Study 12 (Iran), we fixed the order of presentation as optimism, meaning in life, difficulty mindsets, conscientiousness, and virtues because Google Forms does not allow randomization. In Studies 14 (India) and 15 (the United States), we randomized items in two blocks with difficulty-as-improvement, karma, belief in a just world, and religiosity in Block 1 and conservatism in Block 2. We randomized items in each block at the participant level.

Measures. Unless otherwise noted, our response scale was 6 = *strongly agree* to 1 = *strongly disagree*.

Table 3. Difficulty-as-Improvement by Society: Cronbach's Internal Consistency, Item and Scale Means and Standard Deviations.

Difficulty-as-improvement items	Society							
	Australia	Canada	China	India	Iran	New Zealand	Turkey	United States
	M (SD) Endorsement							
In a way, the difficulties I have today are strengthening my character to meet tomorrow's challenges.	4.46 (1.18)	4.66 (1.04)	4.88 (0.86)	5.10 (0.92)	4.85 (1.05)	4.57 (1.16)	5.20 (1.16)	4.52 (1.07)
Experiencing difficulty makes me grow stronger.	4.51 (1.08)	4.72 (1.05)	5.02 (0.81)	5.07 (0.89)	4.70 (1.12)	4.59 (1.13)	4.95 (1.37)	4.54 (1.03)
Experiencing difficulty is the strongest of teachers; I may temporarily feel broken, but in the long run, I will be better.	4.24 (1.15)	4.54 (1.14)	4.86 (0.96)	5.03 (0.89)	4.75 (1.10)	4.32 (1.23)	5.06 (1.25)	4.41 (1.08)
Life is not complete without difficulty, hardship, and suffering.	4.25 (1.30)	4.53 (1.13)	4.56 (1.27)	5.06 (1.14)	4.02 (1.40)	4.16 (1.28)	4.80 (1.51)	4.19 (1.24)
	Scale Reliability, Mean, and Standard Deviation							
Cronbach's α [95% CI]	.84 [.80, .87]	.85 [.82, .88]	.81 [.76, .87]	.79 [.75, .83]	.85 [.82, .89]	.88 [.86, .91]	.81 [.76, .85]	.83 [.81, .85]
Scale mean (SD)	4.36 (0.97)	4.61 (0.91)	4.83 (0.80)	5.06 (0.76)	4.58 (0.98)	4.41 (1.03)	5.00 (1.06)	4.42 (0.90)

Note. Societies in alphabetical order, 1 = *strongly disagree* to 6 = *strongly agree*. SD = standard deviation; CI = confidence interval. We present pooled data for Australia, Studies 3 and 7 ($N = 270$); Canada, Studies 4 and 8 ($N = 270$); New Zealand Studies 5 and 9 ($N = 270$); the United States, Studies 6, 10, and 15 ($N = 750$).

Difficulty-as-Improvement. Table 3 provides the final secular version of our four-item scale and scale reliability.

Difficulty-as-Importance and Difficulty-as-Impossibility. We used the Fisher and Oyserman (2017) scales (Table S6 in Supplemental Materials for means and standard deviations, and Table 4 for scale reliability). For ease of interpretation, here are the four items in each scale—difficulty-as-importance (“Sometimes if a task feels difficult to me my gut says that it really matters for me.” “If a goal feels difficult to work on, I often think it might be a critical one for me.” “When a task feels difficult, the experience of difficulty sometimes informs me that succeeding in the task is important for me.”) and “Often when a goal feels difficult to attain it turns out to be worth my effort.”) and difficulty-as-impossibility (“Sometimes if a task feels difficult, my gut says it is impossible for me.” “If a goal feels difficult to work on, I often think it might not be for me.” “When a task feels difficult, the experience of difficulty sometimes informs me that succeeding in the task is just not possible for me.” and “Often when a goal feels difficult to attain it turns out to be out of my reach.”).

Identities of Resilience. We measured four facets of resilient identities. In Studies 3 to 6 and 11 to 13: (a) sense of optimism (five-item, Scheier et al., 1994)¹ and (b) presence of meaning and purpose in life (five-item, Steger et al., 2006). In Studies 7 to 13: (c) conscientiousness (nine-item, John & Srivastava, 1999) and (d) character virtues (eight-item forgiveness/mercy, gratitude, judgment/critical thinking, kindness, love, perseverance, prudence, self-regulation, McGrath, 2019). We report the specific items and their descriptive statistics in Supplemental Materials (Tables S6 and S7) and scale reliabilities in Table 4.

Culture-Based Blueprints to Understand Life Suffering. We measured five aspects of our three culture-based blueprints for making sense of suffering (deservingness, authority, and conservatism, see Table 5 for scale reliabilities). In

Studies 14 and 15, we assessed belief in karma (five-item, White et al., 2019), just world belief (eight-item, Lipkus et al., 1996), conservatism (two-item, Newman et al., 2018, 1 = *very liberal* to 7 = *very conservative*), religiosity (three-item, 1 = *not at all religious* to 7 = *very religious*), and spirituality (four-item, 1 = *not at all spiritual* to 7 = *very spiritual*, latter two from Koenig & Büssing, 2010, and White et al., 2019). See Tables S8 and S9 in Supplemental Materials for scale items and descriptive statistics.

Analysis Plan

We used the R v. 4.1 programming language (R Core Team, 2019). For H2, we used the psych package (v. 2.1; Revelle, 2021) for Cronbach's α and the lavaan (v. 0.6; Rosseel, 2012) and semTools packages (v. 0.5–5; Jorgensen et al., 2021) for MI. For H3, we used stats (R Core Team, 2019) for linear regression (predictor: WEIRD-er/less-WEIRD, outcome: difficulty-as-improvement). For H4 and H5, we used lme4 (v. 1.1–23; Bates et al., 2015) in a random-intercepts mixed-effects regression for each identity outcome (fixed effects: interpretations of difficulty, random effects: society [Australia, Canada, China, Iran, New Zealand, Turkey, and the United States] with unstandardized predictors). For H5, we used the H4 models, adding difficulty-as-impossibility and difficulty-as-importance as predictors. For H6, we pooled Study 14 and 15 data and confirmatory factor analyses to test the separateness of belief in karma from a just world and of religiosity from spirituality. We used psych (v. 2.1; Revelle, 2021) for correlational analyses and stats (R Core Team, 2019) for linear regressions. We show the multivariate regression with all predictors and study as a dummy-coded fixed effect (Study 14 = 0; Study 15 = 1) in Supplemental Materials (Table S15 and Figure S3).

Results

H2: Our Constructs Can be Reliably Measured Across Societies. Results support H2. Our difficulty-as-improvement

Table 4. Studies 3 to 13: Cronbach’s α Reliability of Interpretations of Difficulty and Identity of Resilience Measures by Society.

Measure	Cronbach’s α by society						
	Australia	Canada	China	Iran	New Zealand	Turkey	The United States
Interpretation of difficulty							
Difficulty-as-importance	.83 [.80, .86]	.81 [.78, .85]	.90 [.87, .93]	.81 [.77, .85]	.82 [.78, .85]	.79 [.74, .84]	.78 [.75, .80]
Difficulty-as-impossibility	.86 [.84, .89]	.89 [.87, .91]	.87 [.84, .91]	.81 [.77, .86]	.89 [.87, .91]	.79 [.74, .84]	.87 [.86, .89]
Identity of resilience							
Conscientiousness	.87 [.85, .90]	.86 [.84, .89]	.73 [.65, .80]	.80 [.76, .84]	.86 [.84, .89]	.82 [.78, .86]	.84 [.83, .86]
Virtuousness	.69 [.63, .74]	.71 [.65, .76]	.81 [.76, .86]	.77 [.72, .81]	.75 [.70, .79]	.80 [.75, .84]	.72 [.69, .75]
Having meaning in life	.93 [.92, .95]	.93 [.92, .95]	.86 [.82, .90]	.90 [.88, .92]	.93 [.92, .95]	.85 [.82, .88]	.91 [.90, .92]
Optimism	.84 [.80, .87]	.84 [.81, .87]	.65 [.55, .74]	.70 [.64, .77]	.86 [.84, .89]	.66 [.58, .74]	.83 [.81, .85]

Note. In Australia, Canada, New Zealand, and the United States, we assessed meaning in life and optimism in one study and conscientiousness, and virtues in another, including interpretations of difficulty in both studies. We report alpha reliabilities for difficulty-as-importance and difficulty-as-impossibility for aggregated data sets (Australia, $N = 270$; Canada, $N = 270$; New Zealand, $N = 270$; and the United States, $N = 404$).

Table 5. Studies 14 to 15: Measures of Deservingness and Authority Blueprints, Reliability by Society.

Measure	Cronbach’s α [95% CI or Pearson’s r	
	India	United States
Deservingness		
Karma	.80 [.76, .83]	.84 [.82, .86]
Belief in just world	.84 [.81, .86]	.87 [.85, .88]
Authority		
Religiosity	.85 [.82, .88]	.94 [.93, .94]
Spirituality	.86 [.84, .89]	.94 [.93, .94]
Conservatism (as Pearson’s r)	.94 [.93, .95]	.97 [.97, .98]

Note. CI = confidence interval.

Table 6. Difficulty-as-Improvement MI Models Across Eight Societies.

Model	χ^2	$\Delta\chi^2$	df	Δdf	CFI	ΔCFI	BIC
Configural	46.92	—	16	—	.990	—	25,549
Weak MI	78.40	23.58	37	21	.990	.001	25,417
Strong MI	195.63	119.67***	58	21	.952	.038	25,371
Strict MI	373.14	120.40***	65	7	.890	.061	25,494

Note. Configural = equal structure, varying loadings, intercepts, and residual variances; Weak MI = equal structure and loadings, varying intercepts and residual variances; Strong MI = equal structure, loading, and intercepts, varying residual variances; Strict MI = equal structure, loading, intercepts, and residual variances; df = degrees of freedom; MI = measurement invariance; CFI = comparative fit index; BIC = Bayesian information criterion, BIC accounts for fit and penalizes for model complexity—lower values indicate a better solution for the trade-off between model complexity and fit. Our four multigroup confirmatory factor analysis models entailed increasing equality constraints on factor loadings, intercepts, and residual variances. We used Cheung and Rensvold’s (2002) $\Delta CFI \leq 0.01$ threshold to demonstrate invariance and looked for the lowest BIC, finding the lowest BIC if intercepts are constrained across groups. This approach favors strong MI over other models.

*** $p < .001$.

scale is reliable (Table 3). We can meaningfully compare difficulty-as-improvement across populations given that our analysis supports configural (construct structure), metric (item factor loadings), and scalar (item intercepts) MI (Table 6, see Supplemental Materials for details). We also verified difficulty-as-importance and difficulty-as-impossibility MI (including data from O’Donnell et al., 2022, to increase the stability of our results). We found evidence for configural

and metric invariance. That is, difficulty-as-importance items load onto a single factor, as do difficulty-as-impossibility ones. Items can be assumed to load onto each factor the same way in more- and less-WEIRD groups (for details, see Tables S3 and S4 in Supplemental Materials). Our results suggest people across societies understand difficulty-as-importance, difficulty-as-impossibility, and difficulty-as-improvement similarly.

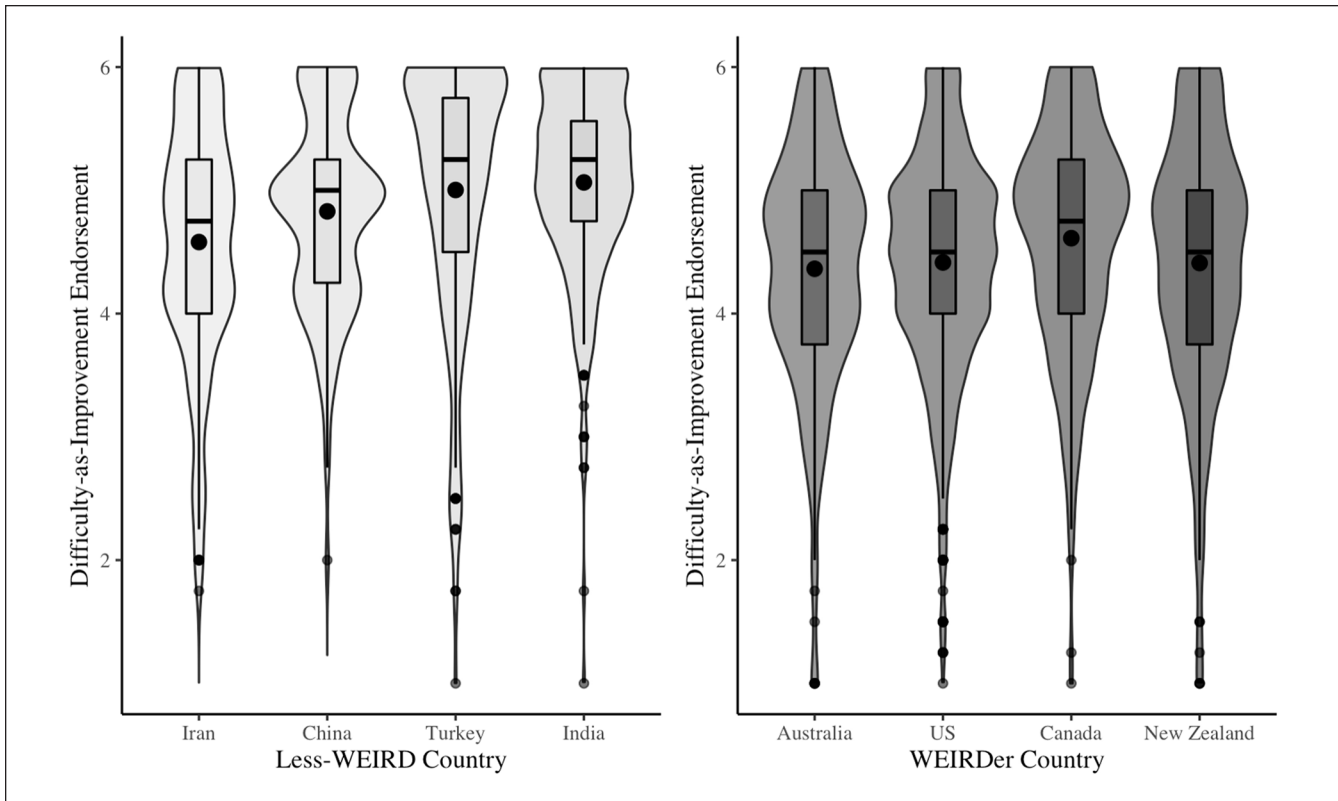


Figure 2. Mean Endorsement of Difficulty-as-Improvement in Less-WEIRD (Left Plot) and WEIRD-er Societies (Right Plot). Note. Black dots represent means; horizontal lines cutting across the box plots represent medians; each box represents the interquartile range; each side of the box plot is a probability density distribution of the data smoothed by a kernel density estimator. Data are combined across studies when multiple samples were collected from a given society.

Table 7. Correlations Between Interpretations of Difficulty in Less and More WEIRD Cultures.

Interpretation of experienced difficulty measures		Pearson's <i>r</i> [95% CI] by culture type		Fisher's <i>z</i>	
		WEIRD-er	Less WEIRD	Difference between correlations	<i>p</i>
Improvement	Importance	.65 [.61, .68]	.31 [.23, .38]	8.54	<.001
Improvement	Impossibility	-.35 [-.39, -.30]	-.13 [-.21, -.04]	4.37	<.001
Importance	Impossibility	-.26 [-.31, -.21]	-.05 [-.14, .04]	4.06	<.001

Note. CI = confidence interval; WEIRD = Western, Educated, Industrialized, Rich, Democratic.

H3: People Endorse Difficulty-as-Improvement More in Less-WEIRD than WEIRD-er Societies. Results support H3. As Figure 2 depicts graphically, linear regression analyses reveal that in less-WEIRD societies people endorsed difficulty-as-improvement more, $F(1, 2377) = 129.2, p < .001, R^2_{Adjusted} = .05$. On average, in WEIRD-er societies, people were closer to the “slightly agree” option ($b = 4.44, SE = .02$). In less-WEIRD societies, they were closer to the “agree” option ($b = 4.90, SE = .03$). Table 3 provides scale means and SDs.

We explored if culture also predicted how much people endorsed difficulty-as-importance and difficulty-as-impossibility. Our results suggest that people in WEIRD-er societies

endorse difficulty-as-impossibility more (WEIRD-er $b = 3.16, SE = .03$; less-WEIRD $b = 2.50, SE = .05, F(1, 1722) = 139, p < .001, R^2_{Adjusted} = .07$) and do not differ in how much they endorse difficulty-as-importance (WEIRD-er $b = 4.04, SE = .03$; less-WEIRD $b = 3.97, SE = .04, F(1, 1721) = 2.42, p = .120, R^2_{Adjusted} = .0008$). The distinct pattern of differences by mindset suggests that effects are not driven by response bias.

We also examined the size of the correlations among the difficulty mindsets. As revealed in Table 7, correlations between each pair of difficulty mindsets were of greater magnitude in WEIRD-er compared with less-WEIRD societies. This pattern supports our inference that

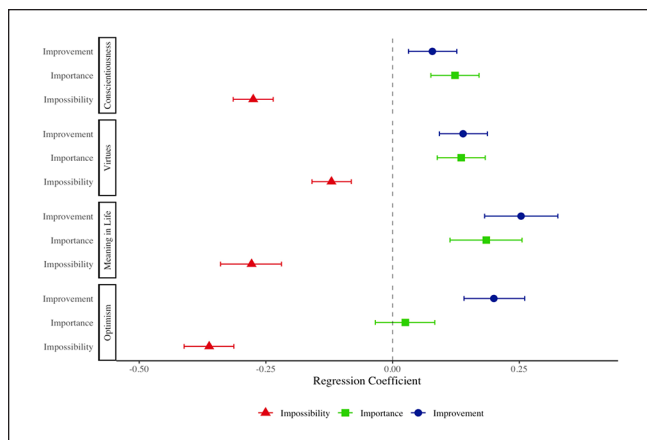


Figure 3. Each Interpretation of Difficulty is Uniquely Associated with Identities of Resilience.

Note. Points represent unstandardized beta coefficients. Whiskers represent 95% confidence intervals. Effects are from linear mixed-effects models with difficulty-as-impossibility, difficulty-as-importance, and difficulty-as-improvement treated as fixed effects and society treated as the random effect. In each model, the outcome is one of the identity variables. The dotted line denotes 0—effects that overlap this line are nonsignificant—all other effects, $p < .001$. Color and shape signify predictor variables (red triangles = difficulty-as-impossibility; green squares = difficulty-as-importance; blue circles = difficulty-as-improvement).

people in less-WEIRD societies are more likely to infer that multiple ideas can be true simultaneously (what we term “both-and” reasoning style). In contrast, people in WEIRD-er societies are more likely to infer that if one idea is true, others are not (what we term an “either-or” reasoning style).

H4: People Who Endorse Difficulty-as-Improvement See Themselves as Conscientious, Virtuous, Optimistic, and Living a Meaningful Life. Results support H4. The more people endorsed difficulty-as-improvement, the more they viewed themselves as being conscientious ($b = .21, SE = .03, p < .001$), virtuous ($b = .24, SE = .02, p < .001$), optimistic ($b = .32, SE = .03, p < .001$), and having a life of meaning and purpose ($b = .42, SE = .03, p < .001$).

H5: H4 is Robust to Controlling for Individual Differences in Difficulty-as-Importance and Difficulty-as-Impossibility. Results support H5. We graphically display the unstandardized regression coefficients for each difficulty mindset in Figure 3. The association between difficulty-as-improvement and each identity-construction outcome was robust. Controlling for the effects of difficulty-as-importance and difficulty-as-impossibility, people who endorsed difficulty-as-improvement were more likely to view themselves as conscientious ($b = .08, SE = .02, p = .001$), virtuous ($b = .14, SE = .02, p < .001$), optimistic ($b = .20, SE = .03, p < .001$), and having a life of meaning and purpose ($b = .25, SE = .04, p < .001$).

We also explored the pattern of effects for difficulty-as-importance and difficulty-as-impossibility. Controlling for the effect of difficulty-as-improvement and difficulty-as-impossibility, people who more strongly endorsed difficulty-as-importance experienced themselves as more conscientious ($b = .12, SE = .02, p < .001$), more virtuous ($b = .14, SE = .02, p < .001$), and as having more purpose and meaning in life ($b = .19, SE = .04, p < .001$). How much they endorsed difficulty-as-importance did not predict their optimism ($b = .03, SE = .03, p = .399$) once their difficulty-as-improvement and difficulty-as-impossibility scores were added to the equation. People who more strongly endorsed difficulty-as-impossibility were less conscientious ($b = -.27, SE = .02, p < .001$), reported less character virtue ($b = -.12, SE = .02, p < .001$), were less optimistic ($b = -.36, SE = .03, p < .001$), and found less meaning in life ($b = -.28, SE = .03, p < .001$), controlling for how much they endorsed the two other interpretations of difficulty.

As a final robustness check, we included a fourth control: the fixed mindset of ability (Dweck et al., 1995) in Studies 3 to 13 (see Supplemental Materials, Supplemental Analyses, and Table S11 for details about these items). Fixed ability mindset was correlated more with difficulty-as-impossibility ($r_s = .55-.70$) than with difficulty-as-importance ($r_s = -.23-.15$) or with difficulty-as-improvement ($r_s = -.30-.01$; see Table S12 in Supplemental Materials). The pattern of results that difficulty-as-improvement, difficulty-as-importance, and difficulty-as-impossibility each uniquely add to the variance explained in identity construction is unaffected by the inclusion of this control (see Table S13 and Figure S2 in Supplemental Materials).

H6: People Who More Strongly Endorse Karma and Just World Beliefs and Who are More Religious, Spiritual, and Conservative Also Endorse Difficulty-as-Improvement More. Results support H6. Believing in karma ($r = .59$) and a just world ($r = .56$), being religious ($r = .49$), spiritual ($r = .48$), and conservative ($r = .20$, all $p_s < .001$) were each associated with endorsing difficulty-as-improvement. Results support our preregistered prediction that these culture-based blueprints would matter. Their correlations are presented as a matrix in Supplemental Materials (Table S14).

Next, we conducted five univariate regression analyses. In each, we entered difficulty-as-improvement as the dependent variable, and karma, just world beliefs, religiosity, spirituality, or conservatism as the unstandardized predictor variable. As depicted graphically in Figure 4, more conservative ($b = .14, SE = .03, p < .001$), spiritual ($b = .30, SE = .03, p < .001$), and religious ($b = .28, SE = .02, p < .001$) people who believed in karma ($b = .50, SE = .03, p < .001$) and a just world ($b = .62, SE = .04, p < .001$) scored higher in difficulty-as-improvement. As detailed in Table S15 (Supplemental Materials), follow-up analyses, adding dummy-coded society as a control, reduced the size of these associations (karma, $b = .23$; just world $b = .30, p_s < .001$;

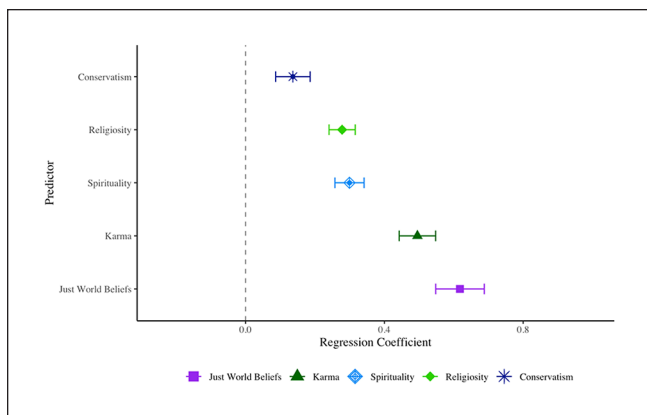


Figure 4. Predicting Difficulty-as-improvement From Conservatism, Higher Authority, and Deservingness.

Note. Our forest plot displays the unstandardized regression coefficient of each predictor on difficulty-as-improvement in univariate regression analyses. Whiskers represent 95% confidence intervals. The unstandardized regression coefficient is represented with a geometric shape. Whisker plots are all to the right of 0, revealing significant associations, $p_s < .001$.

spirituality, $b = .09$, $p = .033$; religiosity, $b = .03$, $p = .446$; conservatism, $b = -.05$, $p = .017$), suggesting that some effects may be specific to the society within which a particular blueprint is embedded.

General Discussion

We applied a culture-based understanding of IBM theory to make six predictions. First (H1, Studies 1 and 2), people can recall times in their lives when task difficulty signaled its inherent value (difficulty-as-importance) or indicated the need to shift (to another goal or an easier route, difficulty-as-impossibility) or times when they experienced a life difficulty. Our corpus analyses reveal that people use words relevant to difficulty-as-importance, difficulty-as-impossibility, and difficulty-as-improvement when they talk about difficulty. Second, difficulty-as-improvement is a culture-general construct (H2, Studies 3–15 and secondary data analyses). It is endorsed and is measurable in more and less-WEIRD societies (strong MI: configural, metric, and scalar). Third, difficulty-as-improvement reveals culture-specificity. People endorse it more in less-WEIRD than WEIRD-er societies (H3, Studies 3–15). Fourth, it matters (H4, Studies 3–13). People who endorse difficulty-as-improvement are more likely to perceive themselves as conscientious, virtuous, and optimistic people who lead lives of purpose and meaning. Fifth (H5, Studies 3–13), these patterns are robust to how much people endorse difficulty-as-importance, difficulty-as-impossibility, and as a final control, fixed ability mindset. Sixth (H6, Studies 14 and 15), difficulty-as-improvement is rooted in culture-based beliefs—religiosity, spirituality, conservatism, belief in karma, and a just world. Even though difficulty-as-importance and

difficulty-as-improvement are associated, each uniquely adds to the variance explained in each identity of resilience. Moreover, difficulty-as-improvement, not difficulty-as-importance, is associated with optimism for the future.

Implications

IBM Theory. Previous IBM theorizing and empirical work focused on the interplay between task or goal-focused identities such as “good student” or “healthy” and difficulty-as-importance and difficulty-as-impossibility interpretations of difficulty with tasks and goals (e.g., Aelenei et al., 2017; Oyserman et al., 2007, 2018, 2021; Smith & Oyserman, 2015). For example, students guided to interpret difficulty-as-importance are more likely to subsequently report that academics are central to their identity (Smith & Oyserman, 2015). They are more likely to believe that they would work on their school-focused possible identities (Aelenei et al., 2017). They generate more school-focused possible identities when asked to describe their future self (Oyserman et al., 2018).

Our results expand IBM in multiple ways. First, they expand the reach of IBM theory from difficulty with tasks and goals to difficulty arising from life circumstances. We showed that our newly developed measure of difficulty-as-improvement is empirically distinct from difficulty-as-importance and difficulty-as-impossibility and a fixed/growth ability mindset (Dweck et al., 1995). Second, our results expand IBM theory from its focus on goal-related identities to a more general focus on identities of resilience. We show that people interpret both their task and goal-related difficulties and their life difficulties as having consequences for who they are. Each difficulty mindset uniquely predicts the extent to which people see themselves as conscientious, virtuous, optimistic, and leading a life of purpose and meaning.

Conscientiousness, Character Virtues, Optimism, and Meaning in Life. Our finding that interpretations of difficulties with tasks and goals and life are associated with experiencing oneself as a conscientious, virtuous, optimistic person whose life has meaning contributes to the psychological literature on predictors of these attributes. Prior studies document associations with other psychological, sociofamilial, and sociostructural predictors. These psychological predictors include an internal locus of control (Taş & İskender, 2018); scoring high in autonomy, competence, relatedness, and beneficence (Martela et al., 2018); and spirituality (Ivtzan et al., 2013). Previously explored sociofamilial and sociostructural predictors include parental warmth (Hjelle et al., 1996), trusting others during adolescence (Eisner, 2014), and socioeconomic status (Ek et al., 2004).

Cultural Generalizability and Specificity. Behavioral scientists tend to study close-at-hand and easy-to-access people from WEIRD-er societies (Oyserman, 2017) and hence cannot tell which psychological processes are culturally generalizable

and which are culture-specific (e.g., Apicella et al., 2020; Henrich et al., 2010; Rad et al., 2018). Culturally generalizable processes should be rooted in experiences people across cultural contexts are likely to have; culture-specific ones in experiences only people in specific cultures are likely to have.

Our results reveal culture generalizability and culture specificity. Regarding culture generalizability, our measures attain a reasonable degree of invariance. Given a universal need to make sense of difficulties in ways that promote both engagement and disengagement, we predicted that difficulty mindsets would be culturally general. Regarding culture specificity, societies differ in how much people endorse each mindset and how much their endorsements covary. Culture-specific beliefs, traditions, and practices give people within a culture a way of thinking and engaging with their world (Boyd, 2017; Cosmides & Tooby, 1992; Henrich, 2016; Oyserman, 2017). On average, WEIRD-er cultures are less conservative, religious, and spiritual and believe less in a just world and karma. We predicted that these beliefs would be associated with higher difficulty-as-improvement scores and hence predicted that people in less-WEIRD cultures would score higher in difficulty-as-improvement.

Culturally Specific Thinking Styles. People in less-WEIRD cultures can hold in mind each way of interpreting difficulty. Therefore, how much they endorse one difficulty mindset has less effect on how much they endorse another (weaker correlations). People in WEIRD-er cultures tend to endorse either one way of interpreting difficulty or another (stronger correlations). Our results thus provide converging evidence that people in less-WEIRD cultures are more likely to engage in a “both-and” reasoning style and people in WEIRD-er ones are more likely to engage in an “either-or” reasoning style. Cultures vary in how much they socialize for individual versus collective connections. These patterns of social cognition, we argue, carry over to thinking styles—to whether people consider ideas as conflicting or co-existing (Ji et al., 2001; Nisbett, 2004; Nisbett & Miyamoto, 2005; Oyserman et al., 2009; Peng & Nisbett, 1999; Talhelm et al., 2015). Our results expand prior studies examining cognitive processes to include less-WEIRD societies not typically studied—India, Iran, and Turkey.

Limitations and Future Direction

Each set of studies is limited. Ours is no exception. We focus on three: sampling frame, methodology, and dependent variables as a bridge to other theories. Regarding the sampling frame, we included a range of societies, purposefully including people from societies that are less represented in psychological research and from diverse societies. Our measures showed measurement invariance and effect on identity across samples. These results increased our confidence that our theory is generalizable. But we did not draw random, representative samples, nor do these eight societies

represent all human populations. Hence, our results represent the first steps, requiring further replication in understudied populations. Our results are particularly preliminary for our analyses of the relationship between difficulty-as-improvement and culture-based blueprints for making sense of life suffering. Given the study we conducted, the strength of the relationship is likely society-specific, so adding a broader range of societies will help specify which aspects are culture-specific versus culture-general.

Second, regarding our method, we document associations at a particular time. We show that these associations are culture-general and robust to accounting for the effects of difficulty-as-importance and difficulty-as-impossibility. Future studies examining contextual effects could begin to assess the extent to which life difficulties increase or undermine interpretations of difficulty-as-improvement. It is possible that experiencing harsh conditions such as financial or safety risks has variable effects on likelihood of endorsing difficulty as improvement. Moreover, effects may vary over time and our computational linguistic methodology in Study 2 paves the way for future computational research to examine how these constructs change across historical time (see Atari & Henrich, 2022).

Finally, regarding dependent variables, we chose four that prior research has tied to a resilient identity. Our results provide a basis for future studies expanding dependent variables in at least four ways. First, a venue for a future study is examining the effects of difficulty mindsets on choice, especially the preference for taking harder paths even when easier ones are available. Difficulty-as-impossibility may focus people on the easier path; difficulty-as-improvement may imply that the easy path is not to be taken. Instead, people who score higher in difficulty-as-improvement may prefer the hard way to attain goals as a carryover of their sense that experiencing unchosen life difficulties can be character building.

Second, future research can examine under which circumstances people see difficulties as something to be endured (difficulty-as-improvement) rather than as choices (difficulty-as-importance). For example, while people can experience school tasks and goals as choices, they should also be able to consider them as things to be endured, and the reverse, it seems possible that depending on the context, people find almost any circumstance as having an element of choice. Where people chronically draw a line to distinguish between the two may be culture-based.

A third venue for future study is examining the connections between IBM and additional personality variables and culture-based blueprints to explain suffering. In the former group, for example, future work might consider narrative approaches to identity that focus on how people synthesize their identities from salient, key moments (e.g., turning points, self-defining memories; Dunlop et al., 2020; McAdams & McLean, 2013; McLean et al., 2020). Narrative approaches define a sequence in which a positive event follows a negative one as redemptive (Adler et al., 2015;

McAdams, 2013; McAdams et al., 2001). Connection with difficulty mindsets is possible because narrative identity scholars have recently developed a close-ended measure of what they describe as a redemptive mindset (e.g., “If I receive bad news, it tends to work out in the long run,” Dunlop et al., 2020). It is possible that the redemptive mindset, which the authors describe as a general belief system tied to the Protestant Ethic, may be associated with our culture-general difficulty-as-improvement measure.

Fourth, regarding deviation from culture-based blueprints for how life should unfold, future work might consider other blueprints that fit in our deservingness and higher authority categories. For example, the prosperity gospel within the Pentecostal form of Christianity is present in African and North American regions. This focus people on obtaining material rather than character gains through suffering (e.g., Heuser, 2016).

Conclusion

We used a culture-based approach to expand IBM theory to how people make sense of their life difficulties. We predicted and showed that difficulty-as-improvement is both culture-general—shared across cultures—and culture-specific, more likely to be endorsed in societies that are less Western, educated, industrialized, rich, or democratic. We developed a culturally general difficulty-as-improvement measure. We showed that people who score higher in difficulty-as-improvement tend to construct more resilient identities, seeing themselves as conscientious, virtuous, optimistic people living lives of meaning. In the face of difficulties, a difficulty-as-improvement mindset can provide the courage to keep going by offering hope, meaning, and the will to engage conscientiously and virtuously.

Contribution Statement

All coauthors participated in initial conceptualization, study design, and initial manuscript development. Each coauthor made unique contributions: Atari carried out the analyses for Study 2. Kiper and Oyserman researched and reviewed relevant literature. Kiper collected part of Study 1 data and was responsible for Studies 1 and 3 to 15 analyses with support from Atari. Yan carried out data collection for part of Study 1 and supported Studies 3 to 15. Oyserman wrote the final version with comments from the coauthor team.

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Supplemental Material

Supplemental material is available online with this article.

Note

1. In Studies 12 and 13, we used a six-item scale, adding an item inadvertently excluded in the other studies (see Supplemental Materials).

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