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Parents think—incorrectly—that teaching their children that the world is a bad place is likely best for them

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ABSTRACT

Primal world beliefs ('primals') are beliefs about the world's basic character, such as *the world is dangerous*. This article investigates probabilistic assumptions about the value of negative primals (e.g., *seeing the world as dangerous keeps me safe*). We first show such assumptions are common. For example, among 185 parents, 53% preferred dangerous world beliefs for their children. We then searched for evidence consistent with these intuitions in 3 national samples and 3 local samples of undergraduates, immigrants (African and Korean), and professionals (car salespeople, lawyers, and cops;), examining correlations between primals and eight life outcomes within 48 occupations (total *N*=4,535) . As predicted, regardless of occupation, more negative primals were almost never associated with better outcomes. Instead, they predicted less success, less job and life satisfaction, worse health, dramatically less flourishing, more negative emotion, more depression, and increased suicide attempts. We discuss why assumptions about the value of negative primals are nevertheless widespread and implications for future research.

I always think everything could be a trap—which is why I'm still alive.

—Prince Humperdinck, *The Princess Bride*, 1987

Simple, descriptive beliefs about the basic character of the world (e.g., *the world is dangerous*) are important to study, challenging to study, and historically understudied, all for the same reason: *the world* is a uniquely large and encompassing object of belief. As previously argued (e.g., Clifton & Kim, 2020), understanding the behavior of any given creature requires the scientist to observe the creature's behavior in multiple environments. Scientists who observe a creature in one environment only, such as a dog in a dog park, are handicapped observers, unable to distinguish context-specific behaviors (i.e., state-like reactions to particular environments, or at least the creature's beliefs/perceptions about that environment) from organism-specific behaviors (i.e., trait-like expressions of that creature's peculiar temperament). Psychologists, likewise, are handicapped observers of human behavior, only able to observe humans while humans are in the world. If humans share highly similar beliefs about the world, there is no attribution problem. But if world beliefs vary, these beliefs could

theoretically drive patterns of action that manifest as traits – neuroticism, optimism, curiosity, attachment style, trust, political attitudes, and so forth – while actually being largely reactions to underlying perceptions. Yet few world beliefs have been studied and no effort made to empirically derive all major world beliefs and how they differentiate themselves statistically.

To address this gap, Clifton et al. (2019) recently conducted the first effort to empirically map all major beliefs about the basic character of the world. They labeled the latent phenomena *primal world beliefs* ('primals') to distinguish simple, adjectival, goal-relevant beliefs (e.g., *the world is a dangerous place*) from metaphysical, incidental, or historical world beliefs (e.g., *the world is composed of 118 chemical elements*). The effort began with ten projects aimed at identifying candidate primals, such as the analysis of >80,000 tweets beginning with the phrase *the world is* and the analysis of >1,700 instances of world description gleaned from 385 of the world's most influential sacred texts, philosophical treatises, novels, political speeches, and films. This led to the identification of 234 items subjected to three rounds of

factor analysis. As shown in (Figure 1, Figure 2), results revealed 26 primals (e.g., the world is beautiful, the world is interconnected; Clifton et al., 2019), most of which group into three clusters. These three beliefs – informally called the 'Big 3' – are the beliefs that the world is Safe (vs. dangerous), Enticing (vs. dull), and Alive (vs. mechanistic), which in turn group into a general factor: overall Good world belief. These primal world beliefs are continuous variables, normally distributed, stable across time, largely orthogonal to demographic variables, and highly correlated to many personality and wellbeing variables.

The claim about wellbeing correlates, however, comes with an asterisk. Only one primal – just world belief – had received serious prior attention across psychological subdisciplines (Koltko-Rivera, 2004). This literature has tied higher just world belief to many success and wellbeing variables, presumably because of the expectation that hard work will be rewarded (e.g., Bartholomaeus & Strelan, 2019; Dalbert & Stoeber, 2005). For example, Dzuka and Dalbert (2006) found that senior citizens of East Slovakia enjoyed much higher life satisfaction when they also saw the world as just, $r(122) = .45$, $p < .001$, and this relationship is even stronger in the general adult population (e.g., $r(422) = .57$, $r(80) = .67$, $r(80) = .54$, $p < .01$; Otto et al., 2009). Just world belief has also been tied to increased health, decreased depression, and many other wellbeing-related outcomes.

Do other primals correlate substantially with wellbeing or is Just world belief special? So far, only two studies have used the Primals Inventory – the only comprehensive measure of primals – to examine primals' wellbeing correlates. Both studies were preliminary, involving few outcomes or early versions of the Primals Inventory (Clifton et al., 2019; Stahlmann et al., 2020). Both unearthed moderate to very large correlations with wellbeing worth exploring further, and many primals correlated with wellbeing. Just world belief might not be special.

To explain primals-wellbeing covariance, researchers have noted that, consistent with current depression theory, schema theory, and the success of established interventions such as Cognitive Behavioral Therapy, much covariation is likely explained by primals influencing wellbeing (Beck, 1964, 2005; Butler et al., 2006; Clifton, 2020b; Hofmann et al., 2012; Janoff-Bulman, 1989; Stahlmann et al., 2020). Considerable covariance, however, might also be explained by primals being indicators or symptoms of outcome variables, not their cause. For example, seeing the world as a barren place could lead to depression or be a symptom of depression. Resolving this key issue will require the identification of interventions capable of altering primal world beliefs – perhaps a tall order, given how fundamental primals appear to be – but the authors are optimistic.

One step towards designing effective interventions may be addressing meta-beliefs (i.e., beliefs about beliefs) that bolster negative primals. These meta-beliefs come in at least two types (Clifton, 2020a). First, *retrospective* meta-beliefs are assumptions that one has little choice but to hold a negative primal because certain experiences are thought to have irrevocably shaped one's identity (a causality claim) such that most individuals who have the experience share the identity (a probability claim). For example, a past primals study subject commented, 'I know many of my opinions [abundant world belief] are biased due to growing up and currently being very poor. It has colored my perception of the world and I know of no way to change that.' While the causality claim is central, the probability claim is likely best examined first because it is readily testable via correlational research and can contribute to interventions capable of testing causality. In this way, several retrospective meta-belief probability claims were recently examined with little support found (Clifton, 2020a). For example, counter to the study subjects quote above, seeing the world as abundant is orthogonal to both childhood socio-economic status as well as current family income. Such findings might help therapists teach patients and clients to combat counterproductive retrospective meta-beliefs

While retrospective meta-beliefs concern the past, *prospective* meta-beliefs concern the future, specifically a belief's utility in achieving some desirable outcome. In practice, desired outcomes may often be the six outcomes identified in (Table 1, Table 2), based on anecdotal observations. For example, a police officer in one study expressed the view that seeing the world as dangerous may damage their wellbeing, but the belief also contributes to workplace success. Here, too, there are causality claims (*my negative primals make me a better police officer*) and probability claims (*police officers with more negative primals usually perform better*). These easily testable probability claims remain unexamined, and, as far as researchers know, may well be true.

This article examines the probability claims of the first three prospective meta-beliefs in (Table 1). After confirming that these prospective meta-beliefs are in fact

Table 1. Six prospective meta-beliefs purporting the utility of negative primals.

Paraphrased Meta-belief	Outcome	Anecdotal Sources
'People usually don't succeed in my job without a darker view of things.'	Job success	Lawyers Business Persons
'Seeing the world as some amazing place often leads to disappointment, which can make you depressed and lose hope – best keep expectations low.'	Negative emotions (job/life satisfaction, suicidal behavior)	Parents Car Mechanics
'Seeing the world as safe where everyone sings "Kumbaya" leaves ou vulnerable to predation, germs, illness, and death – you gotta stay vigilant.'	Physical health	Police Officers Healthcare Workers
'Indulging a fantasy rarely helps anyone achieve their goal and the belief that the world is this wonderful place is a fantasy.'	Perception accuracy	Professors Social Workers
'f I see the world as positive, I''ll get judged as naïve, insensitive to eople''s struggles and a poor example.'	Reputation costs	Politicians Activists
'People who think the world is already good-to-go don't work as hard to make things better – you can't solve a problem without recognizing it.'	Group goals	Environmentalists Religious Missionaries

common (Study 1), we search through six samples, representing 48 occupation groups (Study 2; $N = 4,535$), for instances in which more negative primals were associated with any of the following eight outcomes:

- job success
- job satisfaction
- negative emotion
- depression
- suicide
- physical health
- life satisfaction
- overall psychological flourishing

While depression research might suggest that negative primal world beliefs should correlate with worse outcomes across the board (Beck et al., 1979; Butler et al., 2006; Hofmann et al., 2012) there are conflicting theories. Life satisfaction, for example, is commonly understood as a comparative judgment of one's own life against a referent, whether social (other people), counterfactual (what could have been), or personal (what used to be; e.g., Cheung & Lucas, 2016). If so,

it may be that living a mediocre life in an incredible world where much more seemed readily achievable is less satisfying than living the same mediocre life in a terrible world where one seems highly fortunate. Likewise, negative primals could well be associated with more job success, especially among professions involving low incidence of failure but high cost of failure, such as police officers and lawyers. Concerning health, because seeing the world as dangerous theoretically increases trait vigilance and preparedness, dangerous world belief could lead to successful avoidance of physical dangers, dangerous habits, and pathogens, increasing overall health. In other words, it is reasonable to think that negative primals are associated with positive outcomes, at least for some outcomes and in some professional contexts. If so, establishing the size and direction of correlational relationships between primals and well-being variables is not just worthwhile for designing interventions and increasing scientific knowledge, but for establishing such interventions as ethical in the first place. Before trying to change someone's most fundamental beliefs, checking a few correlations is appropriate.

Table 2. Descriptive statistics for 11 meta-beliefs among 185 parents.

Belief in the helpfulness of seeing the world as …	M	SD	SEM	Median	% <2.5 (interpretation)	% <4	Kurtosis	α
Safe (vs. dangerous)	3.10	.62	.05	3.07	14% (meaningful)	92%	.27	.89
Pleasurable (vs. miserable)	3.57	.75	.06	3.60	7% (insubstantial)	64%	.56	.69
Progressing (vs. declining)	2.99	.91	.07	3.00	21% (substantial)	85%	.29	.73
Harmless (vs. threatening)	2.44	.87	.06	2.40	53% (majority)	94%	−.62	.69
Cooperative (vs. competitive)	3.11	1.21	.09	3.33	32% (major)	65%	−.68	.81
Stable (vs. fragile)	2.66	1.10	.08	2.67	41% (major)	83%	−.8	.76
Just (vs. unjust)	3.11	.89	.07	3.25	19% (meaningful)	79%	.13	.64
Abundant (vs. barren)	3.64	.89	.07	3.67	11% (meaningful)	50%	.15	.73
Funny (vs. not funny)	2.90	1.14	.08	3.00	36% (major)	77%	−.49	.83
Hierarchical (vs. nonhierarchical)	2.46	1.12	.08	2.50	49% (major)	88%	−.59	.76
Improvable (vs. too hard to improve)	3.97	.72	.05	4.00	2% (insubstantial)	39%	1.55	.70

Possible range on meta-belief scores was 0–5. SEM indicates standard error of the mean.

Study 1: Does anyone associate negative primals with positive outcomes?

Moving beyond the anecdotal, does a non-trivial portion of the population actually associate more negative primals with more positive outcomes? To explore this, we asked parents what primal world beliefs they aim to instill in their children, pre-registering hypotheses before analyses were conducted.

Sample

Parents were recruited via a New York City youth advancement program where their children had been enrolled. Of 185 subjects (M_{age} = 47 years, SD_{age} = 8), 84 were black, 52 Hispanic, 17 white, and the rest mixed or other. Most were mothers (79%), Democrats (67%), and Christian (64%). Median family income was $80,000.

Measure

To measure prospective meta-beliefs about primals rather than primals themselves, the Primals Inventory was adapted. Scale instructions were edited as follows:

> Parents have the privilege and responsibility of preparing their children to navigate the real world—not the world we wish we lived in, but the actual world as it is now. Each statement listed below begins with the phrase "I help my kids when I teach them that . . . " Please indicate the extent to which you agree with each phrase.

The stem 'I help my kid(s) when I teach them . . . ' then appeared in large bold font every five items with ' . . . that' inserted to make items grammatically correct (e.g., . . . *that, on the whole, the world is a safe place*). For the sake of brevity, only 49 of 99 primals items were administered. These measured twelve meta-beliefs, selected for concerning primals where it was thought some prospective meta-belief prevalence might be more likely (Safe, Pleasurable, Regenerative, Progressing, Harmless, Cooperative, Stable, Just, Abundant, Funny, Hierarchical, and Improvable).

Analysis

Because this adaptation of the Primals Inventory was novel, subscales were examined for internal reliability before further analysis, removing items whose inclusion lowered internal reliability more than a = .01. As a result, one item was removed from subscales measuring Cooperative, Stable, Just, Abundant, Funny, Hierarchical, and Improvable. Reliability for Regenerative, however, was too low (a = .50) and abandoned. We then examined descriptive statistics and standard error of the mean. For the sake of this analysis, having a score <2.5 (on a 0 to 5 scale) was considered as believing in the utility of a negative primal and having a score <4 was considered as believing in the utility of avoiding a distinctly positive primal. Our pre-registered hypothesis was that, for Safe and its seven associated tertiary primals, the portion of the population with scores <2.5 would not be *insubstantial* (defined as <9.45%) but either *meaningful* (between 9.45% and 19.45%), *substantial* (between 19.45% and 29.45%), *major* (between 29.45% and 50%), or *a majority* (>50%).

Results

Many parents believed that instilling negative primals in their children is the best way to prepare their children to navigate life, though to varying extents depending on the primal (Table 2 and Figure 1). *Insubstantial* proportions of parents thought that seeing the world as too hard to improve (2%) or miserable (7%) would most benefit their children. *Meaningful, substantial, major*, and slight *majority* proportions of parents, ranging from 11% to 53%, expressed the belief that their children would most benefit by being taught to see the world as dangerous, declining, competitive, fragile, unjust, barren, not funny, and full of physical threats. Furthermore, in all but one instance, a large majority of parents thought that seeing the world as distinctly positive was not ideal, even among only those who saw more value in the positive primal. For example, 92% of parents thought that seeing the world as safe to very safe (i.e., scores of 4–5 on a 0–5 scale) is not best for their children.

Discussion

Prospecrtive meta-beliefs purporting the utility of negative primals cannot be a major driver of negative primals unless such meta-beliefs are also prevalent in the population. Study 1 demonstrated some prevalence by asking 185 New York City ethnic-minority parents what primals they most want to instill in their children. Strongly left-skewed score distributions would have suggested consensus that more positive primals offer more utility, and vice
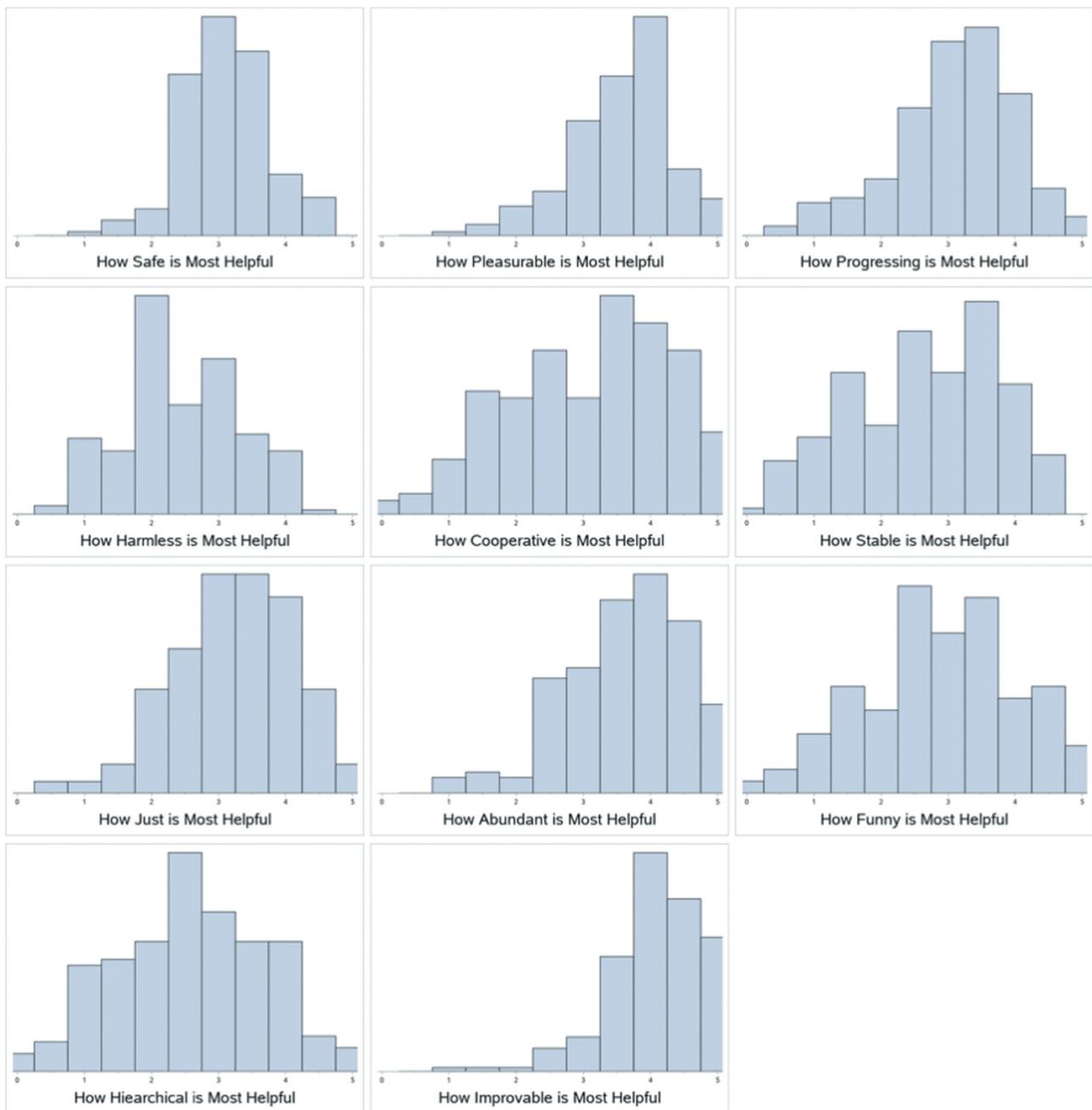
Figure 1. Primal world beliefs that 185 parents considered most helpful to their children.

versa for right-skewed distributions. What was generally found, however, were normal distributions, suggesting disagreement among subjects, with two points worth highlighting. First, consistent with pre-registered hypotheses, a substantial number of parents reported a belief that the best way to prepare children to navigate life was to teach them that the world is in various ways a bad place: including that the world is full of physical threats; does not reward or punish fairly; is rarely that funny; is full of fragile situations that could easily fall apart; is cut-throat; and is getting worse. Second, putting aside parents who see negative primals as most helpful (i.e., focusing only on parents on the right side of the distributions), in most cases several times more parents preferred slightly positive primals to very positive primals. If this result is minimally generalizable, a moderating approach is likely widespread in which seeing the world as slightly good is thought to support positive outcomes, but seeing the world as very good is *too good* because very positive beliefs are associated with less desirable outcomes. These parents may well be right, at least in some contexts. Study 2 investigated this.

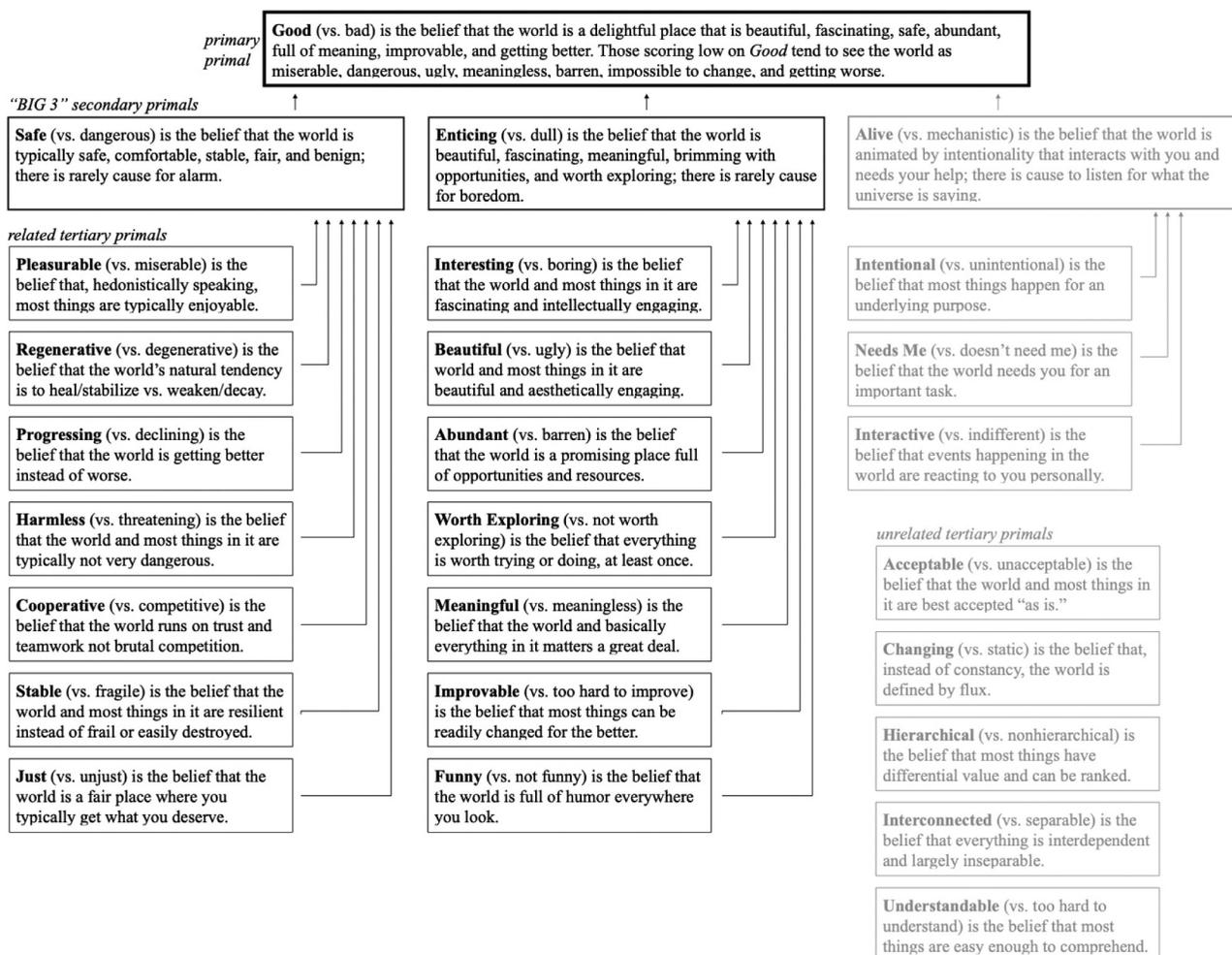**Figure 2.** Seventeen primals with the clearest valence. *Note.* Figure adapted from Clifton and Kim (2020).

Study 2: Establishing primals' success and wellbeing correlates

Study 2 examined six samples and 48 occupational contexts to determine the plausibility of the two meta-beliefs identified in Study 1. Hypotheses were pre-registered before two of the six samples were collected and all analyses conducted. In short, we hypothesized that the probability claims of these meta-beliefs would be unsupported. See supplement for more detail on samples, measures, and results.

Samples

Sample 1: AuthenticHappiness.Org
Of 3,925 subjects recruited via AuthenticHappiness.Org, 59% were male, 66% were younger than 45, 63% were college graduates, 68% were in the USA. Subsets completed measures of life satisfaction ($n = 1,072$); physical health, negative emotion, and psychological flourishing

($n = 1,118$); and depression ($n = 1,291$), doing so on average 5.2, 1.6, and 3.6 months, respectively, from completing the primals measure.

Sample 2: YM.Org
Of 1,727 subjects ($M_{age} = 34$ years, $SD_{age} = 14$) who completed the survey on YourMorals.org, 69% were male, 72% reported being in or completing college, and 74% were in the United States. Demographically similar subjects completed measures of socio-economic status ($n = 1,639$) and life satisfaction ($n = 328$), also not concurrently with the primals measure.

Sample 3: MTurk
Of 692 Americans ($M_{age} = 36$ years, $SD_{age} = 11$) recruited through MTurk, 56% were male, 49% married, 61% college graduates, and 68% white. Subjects completed measures of personal income (used as a proxy for job success among the 72% with full-time jobs), health, negative emotion, depression, life satisfaction, and psychological flourishing.

Sample 4: Immigrants

Of 98 non-white American immigrants from West Africa (n = 45) and South Korea (n = 53) recruited via college campus flyers and social groups, 71% were 2nd generation (primarily college age) and 72% female. Subjects completed measures of negative emotion, life satisfaction, and flourishing.

Sample 5: Philly Pros

Of 110 Philadelphia-area car salespersons, lawyers (private practice), and police officers (M_{age} = 47 years, SD_{age} = 13), 67% were married, 73% were male, and 88% were white. Subjects completed measures of job satisfaction, health, negative emotion, attempted suicide, life satisfaction, psychological flourishing, and detailed job-specific success outcomes.

Sample 6: Undergrads

Of 473 University of Pennsylvania undergraduates participating for course credit (M_{age} = 20 years, SD_{age} = 1), 27% were freshmen, 33% were sophomores, 23% juniors, 17% seniors, 74% female, and 48% white. Subjects completed measures of all eight outcomes.

Measures

Seventeen valenced primals

The Primals Inventory (PI-99) consists of 99 items with 39 reverse-scored (Clifton et al., 2019). Pertinent to Study 2, however, were only 17 primals with the clearest valence. Changing (versus static) world belief, for example, cannot be considered negative or positive for conceptual and empirical reasons. These 17 include Good world belief; Safe world belief and its seven associated tertiary primals; and Enticing world belief and its seven associated tertiary primals (Figure 1).

Job success

Across occupations in Sample 2 and 3, a single item measure of income and socio-economic status was used as a proxy for job success. In Sample 5 (Philly Pros) and Sample 6 (undergrads), however, richly detailed job-specific information was available. For example, car salesperson success was determined by a combination of cars sold per month, monthly closing ratio, monthly commission, rank within dealership, and salary. Job success for students involved GPA, standardized test scores, and quality and quantity of relationships with peers and professors.

Job satisfaction

Thompson and Phua's (2012) psychometrically-validated four-item Brief Index of Job Satisfaction Measure (BIAJS) is an affective measure about one's job, not a measure of objective job conditions or benefits (e.g., renumeration). An example item is *I find real enjoyment in my job* and all items refer to 'my job'. Responses were collected on a five-point likert scale.

Health

Butler and Kern's (2016) psychometrically-validated PERMA Profiler, used to measure overall psychological wellbeing, includes a three-item subscale concerning physical health. An example item is *Compared to others of your same age and sex, how is your health?* (0 = 'terrible', 10 = "excellent).

Negative emotion

Butler and Kern's (2016) PERMA Profiler includes a three-item global measure of negative emotion frequency. Items concern how often one feels *anxious, angry*, and *sad*.

Depression

Samples 3 and 6 completed Antony et al.'s (1998), 21-item Depression Anxiety Stress Scales (DASS-21). An example item is *I was unable to become enthusiastic about anything*. Sample 1 completed Radloff's (1977) popular 20-item CES-D. Example items include *I felt lonely* and *I had crying spells*. Both scales concern experiences over the past week, probe for various depression symptoms, use a 4-point likert scale, and have been validated for nonclinical samples.

Attempted suicide

Osman et al. (2001) Suicidal Behaviors Questionnaire-Revised has been validated for nonclinical samples. Only one item was used because it alone concerned suicide history: *Have you ever thought about or attempted to kill yourself?* Response options were on a six-point scale.

Life satisfaction

Diener, Emmons, Larsen, and Griffin's (1985) five-item Satisfaction With Life Scale (SWLS) has been cited over 25,000 times (Google Scholar, Feb. 2020). It was designed to measure a global judgment of one's life based on one's own criteria. An example item is *In most ways my life is close to my ideal*. Responses were collected on a seven-point likert scale.

Psychological flourishing

Butler and Kern's (2016) psychometrically-validated PERMA Profiler measures five specified dimensions of psychological flourishing that most humans intrinsically value and weighs them equally: positive emotion, engagement, relationships, meaning, and accomplishment (Seligman, 2011). Scores on the five three-item subscales were aggregated into a 15-item general measure of psychological flourishing. An example item from the relationships subscale is *To what extent do you feel loved?* It uses an 11-point response scale.

Analysis

Across samples and within each profession where $n \geq 30$, we examined pairwise Pearson correlations (r) to determine when lower primals scores (i.e., more negative beliefs) were associated with more positive outcomes. In the few cases where outcome measures were skewed, ordinal, or both (e.g., suicide attempts, job success in Sample 3), we computed Kendall's τ b (a non-parametric test) and then converted to Pearson's r for cross-sample comparison. For Sample 5: Philly Professionals, we partialed age and years spent practicing the profession (this data was not available for other samples), which would presumably control for generation-related or seniority effects.

To determine whether seeing the world as slightly positive versus distinctly positive was associated with greater job success, we conducted t-tests comparing those with PI-99 scores rounded to 3 to those rounded to 4 or above, doing so in all occupations where n $\geq$ 30 for both groups. Subjects averaging 5 (the maximum score on all primals) were too few to analyze separately.

Despite conducting several hundred analyses, correcting for multiple comparisons was inappropriate for reasons described by Rubin (2017), O'Keefe (2003), and Rothmann (1990). These reasons are worth discussing since all primals-general research – research on any large category of phenomenon – often involves numerous statistics. First, multiple comparisons do not change statistics; Rubin (2017) notes a gambler might buy 100 lottery tickets to increase chances of winning, but this does not alter the promise (i.e., p-value) of individual tickets. Second, in this study, hypotheses were preregistered. Third, these hypotheses were specific to the overall pattern of correlates associated with a category – 17 valenced primals – which entails examining many statistics. If conclusions are confined to the pattern and not a particular result, the multiple comparison problem is irrelevant because the analysis allows for (and expects) a proportion of false positives. (However, to aid researchers interested in exploring particular relationships, we report significance thresholds of $p < .0001$.) Fourth, many multiple-comparison correction techniques (e.g., bonferroni) are not designed for this sort of analysis approach involving several thousand analyses, potentially resulting in large increases in false negatives (e.g., Rothman, 1990). Fifth, multiple comparison problems concern p-values and not effect sizes on which the present analysis largely relies. Sixth, given the size of Study 2 samples and effect sizes, p-values were often too small to play a meaningful role in interpreting relationships anyway. Seventh, whereas multiple comparison is most problematic when examining one sample and selectively reporting few results of many analyses, here we are examining all outcomes in multiple samples and report results of all analyses conducted – cherry picking is impossible. Nevertheless, because multiple tests of the *same* hypothesis do inflate alpha levels (Rubin, 2017) it is important to note that most of the variance in these 17 primals is explained by Good world belief. Therefore, we encourage moderate caution in the interpretation of results.

Results

Across six samples – 4,535 subjects involving 48 occupation groups – negative primals were almost never associated with positive outcomes. Of 3,921 total statistics produced, 1,860 were significant ($p < .05$). In just six of these (.3%), more negative primals correlated with more positive outcomes, all involving small effect sizes and small occupationally-defined sub-samples. In the other 1,854 relationships (99.7%), more negative primals correlated with worse outcomes, often dramatically worse. For example, Safe world belief was strongly correlated with increased life satisfaction across all six samples and in the vast majority of occupations, including among jobs where the ability to spot threats are useful, such as law enforcement. Effect sizes indicated that, generally speaking, negative primals correlated with slightly less job success (Table 3), moderately less job satisfaction (Table 4), moderately worse health (Table 5), substantially increased negative emotion (Table 6), substantially increased depression symptoms (Table 7), slightly increased lifetime suicide attempts (Table 8), substantially decreased life satisfaction (Table 9), and dramatically decreased overall psychological flourishing (Table 10). There was also no empirical support for the popular moderation approach among the parents of Study 1. Of the 422 t-tests conducted, there were 297 significant differences. In all 297, seeing the world as very positive was associated with more positive outcomes than seeing the world as moderately positive.

Table 3. Job success' relationship to 17 primals using Pearson's r.

	Sample 2: YM.Org	Sample 3: mTurk [k]	Sample 5: Philly Pros	Sample 6: Undergrads
N	1639	476	98	426
Good	.22**	.10*	.09	.24**
Safe	.26**	.17*	.08	.23**
Pleasurable	.20**	.16*	.11	.21**
Regenerative	.15**	.09	.05	.16*
Progressing	.22**	.17*	.11	.20**
Harmless	.24**	.20**	.10	.12*
Cooperative	.16**	.09	**−.02**	.22**
Stable	.15**	.09	**−.03**	.12*
Just	.16**	.12*	.15	.14*
Enticing	.12**	.02	.11	.18*
Interesting	.13**	.01	.07	.18*
Beautiful	.09*	**−.01**	**−.02**	.16*
Abundant	.17**	.06	.18	.18*
Worth Exploring	.02	.01	.04	.13*
Meaningful	.09*	.05	.09	.07
Improvable	.07*	.02	.13	.12*
Funny	.03	.09	.05	.06

*p < .05 **p < .0001 Negative relationships are bolded. [k] Derived from Kendall's τ b and then converted to a Pearson's r.

Discussion

Outcomes

Job success and job satisfaction. Among the eight outcomes examined in Study 2, primals were least correlated with success (Table 3). However, when they were correlated, the connection was almost always to positive primals, even among low-failure-incidence and high-failure-cost jobs where this result is seemingly least likely (e.g., police officers). It may well be that in some professions seeing the world as a negative place might have benefits, but benefits are being dwarfed by known negative consequences of negative global beliefs (less agreeableness, more introversion, more suspicion of colleagues, etc.; Rode et al., 2008; Boehm

& Lyubomirsky, 2008). Indeed, in Study 2, negative primals also correlated with moderately lower job satisfaction (Table 4), itself a factor known to erode workplace performance (e.g., Rezvani et al., 2016). Further research exploring a success-primals connection might examine some of the larger effect sizes tying success to certain primals in certain professions, such as Progressing among entrepreneurs (r = .36) and teachers (r = .41) and the unbelievably strong relationship tying Funny to salary among a small group of police officers (r = .71).

Health. Negative primals, especially dangerous world belief, correlated with worse health (Table 5). Since declining health increases real and perceived vulnerability to increasingly less severe threats, it may be that poor physical health causes one to see the world as more dangerous. But examinations of retrospective meta-beliefs suggest that primals may generally function more as lenses used to interpret experience while being themselves largely uninfluenced by those experiences (Clifton, 2020). If so, primals may causally influence health through five recently identified pathways (Clifton & Kim, 2020). If dangerous world belief increases danger percepts as theorized, this could result in (pathway 1) more frequent and acute stimulation of the cardiotoxic stress axis and (pathway 2) the gene expression pattern known as the conserved transcriptional response to adversity, both of which are associated with chronic and inflammation-related conditions including type 2 diabetes and heart disease. Primals such as Improvable world belief might influence adherence to healthy behaviors (pathway 3), such as exercise. Primals such as

Table 4. Job satisfaction's relationship to 17 primals using Pearson's r.

	Sample 5: Philly Pros	Sample 6: Undergrads
N	110	473
Good	.46**	.33**
Safe	.38**	.30**
Pleasurable	.42**	.27**
Regenerative	.31*	.21**
Progressing	.37*	.31**
Harmless	.18	.19**
Cooperative	.21*	.21**
Stable	.20*	.11*
Just	.38**	.17*
Enticing	.47**	.29**
Interesting	.37**	.22**
Beautiful	.39**	.22**
Abundant	.37**	.22**
Worth Exploring	.20*	.17*
Meaningful	.32*	.17*
Improvable	.46**	.25**
Funny	.22*	.21**

*p < .05 **p < .0001.

Table 5. Health's relationship to 17 primals using Pearson's r.

	Sample 1: AH.Org	Sample 3: mTurk	Sample 5: Philly Pros	Sample 6: Undergrads
N	1,118	692	110	473
Good	.25**	.35**	.39**	.36**
Safe	.24**	.31**	.36**	.40**
Pleasurable	.24**	.32**	.42**	.36**
Regenerative	.20**	.26**	.33*	.35**
Progressing	.20**	.30**	.26*	.25**
Harmless	.21**	.24**	.18	.26**
Cooperative	.13**	.14*	.23*	.29**
Stable	.12**	.12*	.27*	.26**
Just	.18**	.32**	.24*	.24**
Enticing	.17**	.29**	.33*	.23**
Interesting	.12**	.18**	.22*	.19**
Beautiful	.14**	.21**	.20*	.17*
Abundant	.15**	.28**	.37*	.22**
Worth Exploring	.07*	.22**	.14	.14*
Meaningful	.13**	.19**	.32*	.19**
Improvable	.19**	.29**	.36**	.18**
Funny	.08*	.15**	.08	.10*

*p < .05 **p < .0001.

Table 6. Negative emotions' relationship to 17 primals using Pearson's r.

	Sample 1: AH.Org	Sample 3: mTurk	Sample 4: Immigrants	Sample 5: Philly Pros	Sample 6: Undergrads
N	1,118	692	98	110	473
Good	−.44**	−.46**	−.35*	−.42**	−.42**
Safe	−.43**	−.41**	−.33*	−.48**	−.44**
Pleasurable	−.42**	−.41**	−.33*	−.50**	−.39**
Regenerative	−.39**	−.39**	−.15	−.34*	−.31**
Progressing	−.29**	−.28**	−.22*	−.33*	−.31**
Harmless	−.24**	−.24**	−.34*	−.32*	−.25**
Cooperative	−.33**	−.34**	−.20	−.39**	−.34**
Stable	−.32**	−.31**	−.25*	−.40**	−.35**
Just	−.19**	−.17**	−.23*	−.23*	−.24**
Enticing	−.35**	−.43**	−.23*	−.26*	−.29**
Interesting	−.37**	−.49**	−.30*	−.25*	−.24**
Beautiful	−.24**	−.33**	−.23*	−.22*	−.21**
Abundant	−.33**	−.35**	−.15	−.23*	−.24**
Worth Exploring	−.15**	−.27**	−.05	**.05**	−.09
Meaningful	−.32**	−.49**	−.13	−.31*	−.25**
Improvable	−.31**	−.31**	−.12	−.27*	−.28**
Funny	−.17**	−.11*	−.13	−.06	−.18**

*p < .05 **p < .0001 Bold highlights the one positive relationship.

Table 7. Depression's relationship to 17 primals using pairwise Pearson's r.

	Sample 1: AH.Org	Sample 3: mTurk	Sample 6: Undergrads
N	1,291	692	473
Good	−.48**	−.52**	−.49**
Safe	−.45**	−.40**	−.45**
Pleasurable	−.49**	−.45**	−.43**
Regenerative	−.40**	−.44**	−.38**
Progressing	−.32**	−.26**	−.29**
Harmless	−.30**	−.16**	−.21**
Cooperative	−.27**	−.34**	−.29**
Stable	−.31**	−.25**	−.37**
Just	−.37**	−.22**	−.30**
Enticing	−.36**	−.53**	−.39**
Interesting	−.28**	−.54**	−.33**
Beautiful	−.23**	−.40**	−.24**
Abundant	−.34**	−.42**	−.27**
Worth Exploring	−.11*	−.36**	−.23**
Meaningful	−.34**	−.60**	−.41**
Improvable	−.36**	−.37**	−.28**
Funny	−.17**	−.15**	−.21**

*p < .05 **p < .0001.

Table 8. Attempted suicide's relationship to 17 primals using Kendall's τ b converted to Pearson's r.

	Sample 5: Philly Pros	Sample 6: Undergrads
N	110	473
Good	−.20	−.32**
Safe	−.25*	−.26**
Pleasurable	−.20	−.34**
Regenerative	−.17	−.17*
Progressing	−.30*	−.21*
Harmless	−.12	−.10
Cooperative	−.14	−.12*
Stable	−.35*	−.15*
Just	−.10	−.24**
Enticing	−.06	−.27**
Interesting	−.11	−.18*
Beautiful	**.08**	−.16*
Abundant	−.11	−.23**
Worth Exploring	**.16**	−.09
Meaningful	−.15	−.37**
Improvable	−.02	−.21*
Funny	**.07**	−.06

*p < .05 **p < .0001 Positive relationships are bolded.

Regenerative and Just may influence treatment expectations, which are known to influence treatment outcomes through placebo and other mechanisms (pathway 4). Finally (pathway 5) primals such as Good and Meaningful might increase trait optimism and purpose, which are associated with longevity (Lee et al., 2019) and resistance to age-related conditions (e.g., Alzheimer's, stroke, respiratory disease). Future exploration of the primals-health connection might use more objective measures of physical health (e.g., blood pressure) and automatic physiological responses to threatening but ambiguous stimuli. These five pathways are not exhaustive. A sixth pathway, for example, might be through negative emotion. Study 2 found negative primals moderately correlated with more frequent negative emotion states (Table 6) and research on similar beliefs, such as

beliefs about one's partner (e.g., Niehuis et al., 2011) or abilities (e.g., King, 2016), suggest causality. For example, a negative primal might contribute to anxiety, which is connected to negative outcomes, (e.g., poor academic performance, Liu, 2006), which may in turn perpetuate negative beliefs in the sort of self-perpetuating cycle described by Fredrickson (e.g., Fredrickson, 2001). If entrenched, this dynamic might damage physical health (e.g., Pressman et al., 2013) as well as mental health.

Negative affect and depression. Indeed, a half-century of depression research suggests that global beliefs like primals do not protect the individual from negative emotion, but instead propel the individual towards both increased negative affect and clinical depression (Beck, 1964, 2005; Beck et al., 1979; Butler et al., 2006; Hofmann

Table 9. Life satisfaction's relationship to 17 primals using Pearson's r.

	Sample 1: AH.Org	Sample 2: YM.Org	Sample 3: mTurk	Sample 4: Immigrants	Sample 5: Philly Pros	Sample 6: Undergrads
N	1072	328	692	98	110	473
Good	.43**	.52**	.49**	.42**	.55**	.54**
Safe	.37**	.45**	.45**	.50**	.50**	.49**
Pleasurable	.43**	.45**	.45**	.39**	.52**	.50**
Regenerative	.32**	.32**	.37**	.29*	.33*	.38**
Progressing	.27**	.30**	.38**	.30*	.41**	.33**
Harmless	.24**	.32**	.36**	.46**	.29*	.25**
Cooperative	.22**	.27**	.23**	.45**	.34*	.35**
Stable	.20**	.30**	.27**	.43**	.39**	.34**
Just	.34**	.34**	.47**	.29*	.39**	.32**
Enticing	.37**	.42**	.37**	.21*	.49**	.47**
Interesting	.25**	.38**	.18**	.20*	.45**	.42**
Beautiful	.29**	.35**	.35**	.21*	.36*	.38**
Abundant	.31**	.37**	.35**	.21*	.42**	.39**
Worth Exploring	.15**	.16*	.20**	.00	.22*	.31**
Meaningful	.28**	.36**	.24**	.03	.47**	.31**
Improvable	.32**	.27**	.38**	.18	.41**	.32**
Funny	.26**	.16*	.26**	.22*	.20*	.22**

*p < .05 **p < .0001.

Table 10. Psychological flourishing's relationship to 17 primals using Pearson's r.

	Sample 1: AH.Org	Sample 3: mTurk	Sample 4: Immigrants[PR]	Sample 5: Philly Pros	Sample 6: Undergrads
N	1,118	692	98	110	473
Good	.48**	.61**	.43**	.57**	.60**
Safe	.39**	.50**	.41**	.45**	.51**
Pleasurable	.44**	.53**	.35*	.57**	.51**
Regenerative	.36**	.46**	.23*	.41**	.41**
Progressing	.27**	.41**	.25*	.33*	.32**
Harmless	.26**	.34**	.41**	.12	.23**
Cooperative	.20**	.25**	.27*	.37**	.35**
Stable	.21**	.25**	.35*	.31*	.36**
Just	.39**	.49**	.28*	.40**	.40**
Enticing	.41**	.55**	.32*	.57**	.53**
Interesting	.26**	.34**	.30*	.48**	.45**
Beautiful	.30**	.47**	.34*	.44**	.35**
Abundant	.35**	.49**	.28*	.56**	.41**
Worth Exploring	.20**	.37**	.05	.25*	.33**
Meaningful	.31**	.39**	.17	.52**	.46**
Improvable	.38**	.51**	.25*	.43**	.39**
Funny	.23**	.30**	.24*	.22*	.26**

[PR]Sample 4 did not complete the entire PERMA Profiler so combined scores on the positive emotion and relationship subscales were used as a proxy. *p < .05 **p < .0001.

et al., 2012). Beck organized depression-inducing beliefs into three topics called the *Cognitive Triad* concerning the self, the self's future, and the self's world. Primals are a specific subset of the latter, though Beck uses *world* to refer primarily to specific people within the individual's immediate social environment (e.g., *My boss hates me*) and not both the human and non-human world as one giant place (personal communication, 1 March 2019). Beck's depression-relevant beliefs also involve a particular type of simple, global, current, stable, goal-relevant, and reaction-normative modifier (e.g., *negative, worthless*, and *uncomfortable*, Beck et al., 1979, p. 11). Primals involve similar modifiers – sometimes the same ones – and Study 2 found robust correlational relationship between negative primals and depression (Table 7). If primals do not influence depression, their special irrelevance would require some explanation. Further

exploration of the primals-depression connection might test the relative impact of a CBT-only condition versus a CBT+primals module condition on depression and other outcomes, such as suicide ideation.

Suicide. Suicide is the 17th leading cause of death worldwide, killing ~800,000 annually, 79% in low- to middle-income countries (World Health Organization, 2016). Correlates of suicide include being bullied, bullying others (Hinduja & Patchin, 2010), and, according to Study 2, some negative primal world beliefs (Table 8). Among 473 college students, for example, low Meaningful (i.e., the belief that the world is a place where most things, situations, and events likely do not matter) correlated with having once attempted suicide (r = −.37, p < .0001). Given the prominence of the Interpersonal Theory of Suicide (Van Orden et al., 2010), which holds that the belief that one

does not belong and is a burden on others leads to suicidal desire, an exception to Study 2's analysis plan was made to examine one of the non-valenced primals. Needs Me, the belief that the world needs one's help in particular, correlated with suicide history in both samples (undergrads: $r(474) = -.31, p < .0001$; Philly professionals: $r(108) = -.24, p = .048$), and might be worth examining in future suicide research.

Life satisfaction. Negative primals correlated strongly with decreased life satisfaction (Table 9). This appears inconsistent with the view of life satisfaction as a comparison between one's life and certain reference norms, including previous circumstances, counterfactuals, or social comparison (e.g., Cheung & Lucas, 2016) because, in a terrible world, a mediocre life should be a great success. Yet other perspectives on life satisfaction are consonant. A termed *bottom-up* approach considers life satisfaction as a general judgment that aggregates domain-specific judgements while a *top-down* approach situates life satisfaction as an expression of a stable person characteristic (e.g., Erdogan et al., 2012). Another non-mutually exclusive explanation may be that primals influence a variety of behaviors which then impacts outcomes and in turn overall life satisfaction. Still another explanation is the simpler notion that a sense of satisfaction is elusive in any place perceived as terrible, regardless of outcomes or behaviors.

Flourishing. Because life satisfaction judgements rely on an individual's own unspecified criteria, individuals may make these judgements in incommensurate ways, adding noise, suppressing effect sizes, and frustrating comparisons across persons. This can be partially side-stepped by prescribing life domains and how they are weighted. Seligman's (2011) definition of psychological flourishing specifies five domains which are weighted equally in the PERMA Profiler's aggregated flourishing score. Domains are frequency of (a) positive emotion and (b) engagement; (c) quality of relationships; (d) finding meaning in activities and life direction; and (e) frequency and feelings of accomplishment. Across persons, groups, and occupations, Study 2 found that the outcome most correlated with negative primals was decreased overall psychological flourishing (Table 10).

Measurement error

A meaningful portion of covariance between primals and these eight outcomes is very likely due to measurement error, especially positivity bias and shared method-variance. Still, many observed relationships are too large to be fully explained in this way and involved consistent differentiation among primals. Health, for example, correlated with Safe world belief among 473 undergraduates at $r = .40$ and was more highly correlated than Enticing in all four samples. If, in addition to belief valence, belief content matters, covariance is insufficiently explained by similar methods or general positivity. Furthermore, Sample 1 and 2 took measures a few months apart on average. This likely dampened effect sizes and blunts concerns that primals are symptoms rather than stable risk factors – a concern leveled at Beck until the success of Cognitive Behavioral Therapy (CBT) settled the issue. Correlations with suicide were especially interesting because, while effect sizes were smaller in comparison, other outcomes concern concurrent, feeling states (e.g., depression) and not the lifetime prevalence of a discrete event possibly occurring many years prior. Error due to misremembering is likely low and the concern that the negative primal is a symptom of suicide ideation muted, though not entirely.

Just world belief not especially correlated

One novel and robust finding of Study 2 is that Just world belief is not especially correlated to wellbeing outcomes. It was rarely among either the least correlated – that honor most often went to Funny and Worth Exploring – or most correlated – usually Good, Safe, and Enticing. Indeed, the discovery that Just world belief belongs in a supercluster of 21 intercorrelating primals centered around overall Good world belief may come to cast much Just world belief literature in a new light. Presumably, if any one primal in this supercluster was examined first and in connection to a wide array of wellbeing outcomes, numerous substantial correlational relationships would surface that were not attributable to variance (or causal mechanisms) specific to that primal. Thus, future research faces the task of sorting previously-found correlates of Just world belief into two boxes: those uniquely relevant to Just and those uniquely relevant to other primals in the supercluster, which in most cases will presumably be overall Good world belief (Clifton, in press). For example, Just world belief has been tied to physician-adjudicated recovery from myocardial infarction (Agrawal & Dalal, 1993), but general Safe world belief, which usually correlates with Just around $r = .65$, may be more relevant, suggesting subtle but theoretically meaningful differences in cognitive frames at play.

General discussion

Study 1 helped establish that seeing more utility in negative primals than positive primals is common. This was done by asking 185 parents which primals they thought would best serve their children. Results revealed two notable meta-beliefs. First, for most primals, a sizeable minority of parents – in one case a majority – reported that the best way to prepare their children to navigate life was to teach them the world is in various ways a bad place, specifically that it is dangerous, unfair, rarely funny, unstable, cut-throat, and getting worse. Secondly, looking at only those who saw the greatest value in positive primals, clear majorities of parents saw less positive primals as better for their children than more positive primals. One parent volunteered a rationale for this popular moderation approaching: *I don't want my children to have so much fear that they're afraid to get out there and try stuff, but I do want them to be cautious and not trust people and situations blindly*. In this line of thinking, positive primals are helpful but distinctly positive primals make one naïve and vulnerable. The popularity of this moderation approach is also interesting because, despite surging interest in positive psychology over the past few decades, the value of moderately positive beliefs relative to very positive beliefs is underexamined. Relevant work on positive illusions usually finds net benefits of very positive beliefs (e.g., Taylor & Armor, 1996). If therapeutic strategies to address an individual's darkest primals fail, maybe targeting primals that are already fairly positive is most promising, unless of course very positive primals are actually damaging illusions.

When might very positive primals be damaging illusions (i.e., associated with negative outcomes)? Study 2 was a big-net search for these contexts. We examined eight outcomes, six samples, 4,535 unique subjects, and 48 occupations ($n \geq 30$), including lawyers, doctors, police officers, professors, and so forth. This unearthed 1,860 significant correlations between primals and outcomes, and the overall pattern was clear. In 99.7% of these relationships, more negative primals were associated with worse outcomes, roughly categorized as slightly less job success, moderately less job satisfaction, much less life satisfaction, moderately worse health, much increased frequency of negative emotion and other depression symptoms, dramatically decreased psychological flourishing, and moderately increased likelihood of having attempted suicide. We also found no empirical justification for the popular moderation approach. In 297 of 297 significant differences in outcomes, those who saw the world as somewhat positive always experienced worse outcomes than those who saw the world as very positive.

In sum, a robust correlational relationship exists between more negative primals and more negative outcomes, even when comparing positive beliefs to positive beliefs, even when comparing within occupation. The seemingly widespread meta-belief that associates negative primals with positive outcomes is unsupported.

If so, why are these meta-beliefs so common? Why are parents aiming to teach beliefs to their children that seem more likely to hurt them than help them? We see two clues, the first in the optimism literature. Though optimism correlates with positive outcomes, common sense and empirical research suggest high optimism can lead to problems in certain domains, such as when a pilot is doing a final equipment check before a flight (e.g., Forgeard & Seligman, 2012). The proposed solution is flexibility and domain selectivity to avoid a totalizing pattern (Seligman, 1991; Armor & Taylor, 1998). For similar reasons, individuals might believe that highly positive primals preclude flexibility and can at times led to disaster.

The second clue lies in the diversity of primals themselves, which, like meta-beliefs, are normally distributed. Individuals may implicitly define relatively narrow bands of belief content within which 'reasonable' people can disagree. Then, recognizing some utility in being as positive as reason permits, position themselves near the upper limit of those bands, resulting in seeing primals more negative than one's own as more reasonable compared to primals that are more positive than one's own, which would appear more totalizing and inflexible – like a Bayesian prior that refuses updating despite clear evidence. Parents would of course not wish unreasonable and debilitating beliefs on their children.

Yet Study 2 clearly shows that very positive primals cannot be debilitating. The hundreds of Study 2 subjects who saw the world as very safe, for example, did not achieve increased success, health, and wellbeing by stumbling through life in a positive haze, unable to perceive, anticipate, or respond to threats. Thus, we propose a category mistake is being made. Primals are not behaviors, but beliefs, and, as beliefs about general character only – the world's traits not states – much interpretive flexibility is inherent. Consider, for example, non-world trait beliefs such as *Jill is a liar* and *Jack is an extrovert*. As trait claims, those holding such beliefs are not expected to believe that Jill never tells the truth or that Jack has never been quiet at a party. Instead, these beliefs are thought to inform a context-dependent posture towards Jack and Jill that not just allows but expects numerous exceptions. In this way, primal world beliefs are trait beliefs about the universe that entail no totalizing thinking. To explore this further, researchers might examine whether extreme primals are associated with losses in interpretive flexibility or accuracy in split-second decision making.

In presenting a clear pattern of results, Study 2 also suggests subtler implications for intervention research by raising questions about the world itself – not just beliefs about it. Charnov (1976) proposed Marginal Value Theorem to describe optimal foraging strategies when food is in patches and a forager must spend time travelling between patches. In short, foragers should leave patches 'when the marginal capture rate in the patch drops to the average capture rate for the habitat' (p. 132). Now, imagine a researcher did not know the average capture rate of a habitat, but did know creature differences in both expected average capture rates and forager outcomes. If so, comparing creature outcomes to creature beliefs should shed some light on actual environmental conditions. In humans, the *average capture rate for the habitat* is roughly equivalent to Abundant world belief, a facet of Enticing. Study 2 results suggest that higher Abundant scores are linearly tied to positive outcomes, suggesting that, seemingly no matter how high Abundant scores get, even higher scores are associated with improved outcomes, suggesting the world may be objectively a fairly abundant place. If so, the same logic applies to other primals. For example, if it is beneficial to recognize dangerous situations as dangerous, but seeing the world as dangerous is associated with much worse outcomes, then perhaps the world is not so dangerous. Another possibility, however, is that the accuracy of primal world beliefs is largely divorced from their utility. But if so, then either (a) the world is a good place or (b) the world is a bad place but there's little utility in seeing it that way. In either case, individuals (and therapists) might benefit from a benign agnostic utilitarianism that encourages the adoption of positive primals without fearing infidelity to 'true' primal world beliefs.

Limitations

While Study 1 aimed to shed light on the prevalence of a phenomenon, the sample and primals examined were selected for likely prevalence, thus limiting generalizability. In particular, subjects were mostly black and Hispanic and therefore racially unrepresentative of the broader USA population. In Study 2, *t*-tests are a statistically crude way of establishing linearity between primals and positive outcomes at the upper levels and larger samples of subjects with more unusually high scores are needed. In two samples, measures of socio-economic status or personal income were used as proxies for job success and are arguably poor proxies. Because the current interest was identifying trends across primals, samples, and outcomes, no correction was made for multiple comparisons, which limits the generalizability of any one relationship despite pre-registration and replication (see above discussion). Previous literature connecting just world belief to increased victim-blaming and less prosociality (e.g., Benson & Ritter, 1990; Sakallı-Uğurlu et al., 2007) should serve as a reminder that, outside these eight outcome variables, future research may yet find undesirable correlates of positive primals. All studies rely on self-report. Finally, it bears repeating that correlational results like this do not allow causal inference. The probability claims of meta-beliefs were examined, not causal claims, though perhaps some guardrails exclude the most extreme causal claims. For example, *seeing the world as safe has a debilitating effect on health* cannot be accurate – Prince Humperdinck is more likely to remain alive despite thinking everything is a trap than because of it.

Concluding remarks

Above studies show that many parents seek to teach negative primals to their kids, associating negative primals with better life outcomes, but these associations do not hold. Across samples, work professions, and outcomes, negative primals were nearly always correlated with net negative outcomes, often strongly. Those with more negative primals were less healthy, suffered more frequent negative emotion states, were more likely depressed, were more likely to have attempted suicide, were much less satisfied with their lives, and enjoyed dramatically less psychological flourishing, all while disliking their jobs and being slightly worse at them compared to peers in their profession. These findings on prospective meta-beliefs, combined with recent work on retrospective meta-beliefs, now lay the groundwork for dynamic experimental approaches capable of changing primal word beliefs by disputing seemingly the two main meta-beliefs that reinforce negative primals: "I have to see the world as a bad place because of what I''ve been through (retrospective) and because it helps me (prospective)". In the meantime, as primals research exploring causality continues, parents – including the authors – might consider pausing any well-meaning efforts to teach negative primals to children. After all, children too cannot escape the world. The only choice

that they or any of us have is the power of deciding our attitude towards being here.

Disclosure statement

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Data availability statement

The data described in this article is not publically available. If interested, please contact first author.

Open scholarship

This article has earned the Center for Open Science badge for Preregistered. The materials are openly accessible at https://osf.io/gw79e/?view_only=de0b61485c4748979414e51df0af5b5d.

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