

Measuring High Performance: The High Performance Indicator Development and Validation

Alissa J. Mrazek, Michael D. Mrazek
University of California Santa Barbara

Daniel A. Southwick
University of Pennsylvania

Brendon Burchard
High Performance Institute

The desire to maximize potential and performance is one of the greatest motivators of the human spirit. Philosophers, scientists, and personal development leaders have long sought to understand the attitudes, behaviors, and traits that enable people to excel, succeed over the long term, and make the most of their lives. However, despite their mutual interest in the topic, little has been done to synthesize efforts across fields. Under the direction of Brendon Burchard, scientists and high performance coaches at High Performance Institute collaborated to create an assessment that measures the habits that lead to long-term success across domains. The assessment, called the *High Performance Indicator* (HPI), is comprised of six subscales that separately measure clarity, energy, necessity, productivity, influence, and courage. Two studies with a total of 174,054 participants, showed that the HPI was predictive of several important life outcomes. In Study 1, the HPI was predictive of happiness ($r = .58$), confidence ($r = .67$), education level ($r_s = .137$), perceived excellence, ($r = .50$) and perceived success in comparison to peers to over the long term ($r = .67, p < .001$). However, the internal consistency and dimensionality of HPI subscales in Study 1 could be improved due to some unclear questions and overlapping items. In Study 2, modified HPI items showed a high-level of internal consistency for each subscale (Cronbach's α 's from .74 to .87), and a latent dimensionality that reflected six unique constructs. Similar to Study 1, HPI scores in Study 2 were predictive of important life outcomes, such as life satisfaction ($r = .62$), quality of interpersonal relationships ($r = .22$), work quality ($r = .60$), career impact ($r = .58$), and income ($r_s = .23$). Subsequent analysis of $n = 109$ attendees of High Performance Academy provided evidence that these habits could be substantially enhanced through high performance training ($d = 1.04$).

Excellence is an art won by training and habituation. We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.

—Aristotle

High Performance Institute seeks to provide its clients and students with the most effective strategies, tools and training for professional effectiveness and personal development. As a first step in our mission of bringing more scientific rigor into the process of personal transformation, we have conducted what is, to our knowledge, the largest high performance study of all time ($N = 174,054$). Our goal was to develop a reliable and valid assessment tool that helps scientists, organizations, coaches, and individuals identify and measure the “high performance habits” that predict success over the long-term.

Traditionally, personal development leaders and psychological researchers have had diverging goals and approaches. Psychologists have often argued that personal development programs use “a gallon of clinical lore but only a teaspoon of research.”¹; e.g. 2,3,4 Meanwhile, personal

development leaders have argued that psychology research remains conceptual or moves at a “glacial” pace, which hinders its ability for practical application.⁵

In the last two decades, however, psychology research and personal development literature have grown more aligned. Since the advent of positive psychology, researchers have placed an increased emphasis on developing interventions that help people cultivate the best that life has to offer.⁶ This objective is more aligned with personal development than traditional psychology research, which has often focused on treating mental disorder.⁷ Over a similar period, personal development leaders have begun relying more on science to inform their message. The recent market success of science/self-help hybrid books,^{e.g. 8,9,10} is demonstrative of an increased demand for research-based personal development advice—a trend which industry experts anticipate to continue to grow in the future.¹¹

Unfortunately, even though psychology researchers and personal development leaders have grown more aligned in their objectives, collaboration between the fields remains limited. This lack of collaboration has at least two consequences. First,

when personal development leaders ignore scientific research, they increase the likelihood that their programs will promote ineffective practices. And, in cases of flagrant ignorance, irresponsible leaders risk harming the well-being and health of their followers.^{e.g. 12} Second, when scientists ignore strategies and common sense ideas from the real-world, they can waste time, energy, and resources attempting to solve problems or answer questions that have obvious solutions.¹³

As a point of interest, it is worth noting the temporal relationship between innovation in the personal development industry and psychological science. Between the two, it seems that personal development leaders are usually the first to innovate. For example, in the early 1980's, Tony Robbins taught his audience to expand their posture in order to change their emotional state.^{14,5} Twenty-eight years later, Carney, Cuddy, and Yap,¹⁵ published a paper in *Psychological Science* in support of a similar strategy called "power posing." In 1937, Napoleon Hill encouraged his followers to interpret setbacks as "temporary defeats" rather than permanent failures.¹⁶ Forty-one years later, Abramson, Seligman, and Teasdale¹⁷ published an article in the *Journal of Abnormal Psychology* arguing that interpreting adversity as a "temporary" occurrence increases individual resilience. Loving-kindness meditation, or "Mettā," was developed before the time of Buddha.¹⁸ Roughly 2500 years later, Fredrickson and colleagues¹⁹ published a paper showing that loving-kindness meditation leads to an array of mental and physical health benefits.

The seed of these scientific breakthroughs did not originate in the laboratory. Rather, the strategies validated in these studies were developed and iterated upon in real-world settings, by individuals searching for ways to improve their lives. Because the personal development audiences constantly demand new approaches to individual transformation, and pay for them, personal development leaders are often the first to *innovate*. Psychological scientists, on the other hand, are often the first to *validate*, because their field is driven by the need to establish empirical proof for its claims. These different objectives—innovation and validation—each require their own set of attitudes, questions, and methods. Each can play an equally important, complementary role in promoting personal transformation.

The attitude of mind for discovery is different from that needed for proof.

—William Beveridge²⁰

Development of the High Performance Framework

Defining high performance and the scope of our research. As opposed to "expertise" which is defined as the ability to reproducibly exhibit superior performance in a particular field,²¹ we define "high performance" as consistently succeeding beyond standard norms *across domains* while maintaining life satisfaction, wellbeing and positive

relationships.²² Our research is focused on understanding, measuring, and developing specific strategies that lead to success in many areas in life. We ask, "Why do some people succeed in some external measures but end up feeling burned out, unfulfilled and alone? Why are others capable of succeeding to the same or greater degree and yet do not compromise their health, happiness or relationships? What's the difference?"

Historically, self-regulation, or "willpower", has been the most studied personality trait associated with high performance. It reliably predicts physical health, income, emotional wellness, academic success and many other important outcomes across the lifespan.^{23,24} However, we argue that willpower alone is not enough to enduringly perform at peak levels across multiple life contexts. Willpower can be directed toward many things and, we believe, is most beneficial when it systematically directed toward *specific* habits that lead to long-term success.

Rather than focusing on overarching personality traits, HPI seeks to study the habit patterns that lead to long-term success. What habits, executed daily, lead to enduring high performance and overall life satisfaction? What behaviors and activities should people prioritize most, when deciding how to marshal their willpower? These questions guided a decades-long qualitative study by Brendon Burchard, CEO of High Performance Institute, that eventually produced HPI's current framework for high performance.

Identifying the high performance habits. For more than a decade leading up to the present research, Burchard, along with several coaches, employees and organizational consultants of High Performance Institute, collected and analyzed data from over 1.6 million high performance clients and online personal development students in 195 countries. This data included results from coaching interventions with thousands of individual clients, detailed pre- and post assessments from tens of thousands of live-workshop attendees over a decade of events, and hundreds of thousands of codified comments from Burchard's online personal development courses or free online training videos, which have received more than 15 million hours of viewing time. Data was also collected from semi-structured interviews with hundreds of elite performers at the top of their field in business, entertainment, athletics, and other domains. Additionally, Burchard and colleagues consulted thousands of articles from the scientific literature on high performance from the last 70 years. Cumulatively, this extensive qualitative research led to the identification of six crucial deliberate habits for reaching high performance in any field or endeavor: seeking clarity, generating energy, raising necessity, increasing productivity, developing influence, and demonstrating courage. Each of these habits was found to be learnable and deployable across multiple contexts of life and career with a similar result: the achievement of long-term success while maintaining well-being and positive relationships.

High Performance Habits. As traditionally conceived, habits are created over time as a specific cue starts to trigger a specific action automatically.²⁵ However, many of the habits that matter most for improving performance do not fit this narrow definition. Many habits don't necessarily become automatic or easier with time. This is partially because greater success in life and business is often accompanied by new challenges. This means that many high performance habits are "deliberate habits." These must be consciously chosen, performed intentionally, and continually practiced. Each of the following habits, we believe, is a deliberate habit—amenable to improvement through consistent, focused effort.

Seek Clarity. High performers actively seek clarity on who they want to be, what they want to accomplish, and how they will achieve it. They are clear about their goals and passions. They have a clear vision of what they will achieve in life and how they will do it. High performers consistently seek clarity as times change and as they take on new projects or enter new social situations.

Generate Energy. High performers generate energy so that they can maintain consistent focus and effort throughout each day. They actively care for their bodies and minds to ensure that they can sustain high levels of energy over the long-term. This translates into greater physical energy, mental stamina, and positive emotions.

Raise Necessity. High performers experience a necessity for exceptional performance. They tap into the reasons why they absolutely must perform well, which produces a powerful drive to work hard and succeed. By combining both internal standards (e.g., identity, beliefs, values, or expectations for excellence) and external demands (e.g., social obligations, competition, public commitments, deadlines), they sustain a high level of motivation.

Increase Productivity. High performers spend their time working on the things that matter. This allows them to consistently produce outputs that truly count. They shield their attention from distractions and opportunities that would pull them away from what matters most. This allows them to stay productive day in and day out.

Develop Influence. High performers develop influence with the people around them. They learn how to get people to believe in and support their efforts and aspirations. By demonstrating strong leadership and being able to persuade people to contribute to important projects, they are able to make the major achievements that require a positive support network.

Demonstrate Courage. High performers demonstrate courage by expressing their ideas, taking bold action, and standing up for themselves and others. They do what they think is right even in the face of fear, uncertainty, threat, or changing conditions. Rather than viewing courage as an occasional act, it is treated as a consistent and deliberate choice.

The Present Research

The present research is a collaboration between High Performance Institute and social scientists at the University of California Santa Barbara and the University of Pennsylvania. As described, the overall framework for high performance, and the habits that support it, were developed by Brendon Burchard and his team. From this initial framework, Burchard and his collaborators began an iterative process of creating and validating a high performance scale that reliably measures the habit constructs and their relationship to important life and career outcomes. This report outlines our findings and progress in developing *The High Performance Indicator* (HPI) thus far.

Study 1

Study 1 was a cross-sectional study for which the major purpose was to validate *The High Performance Indicator* (HPI). Validation of the HPI was organized around three subgoals. The first was to assess the HPI's factor structure and determine whether the instrument's question items correspond to six distinct constructs as initially conceived. The second objective was to evaluate whether the items assessing each distinct habit have sufficiently high inter-item reliability to provide a valid assessment of each construct. Third, the criterion validity of the HPI was assessed by examining whether overall HPI scores predicted important life outcomes related to high performance (e.g. happiness, confidence, duration of success, education, and work quality).

Method

Sample. The High Performance Institute posted on various social media platforms (primarily Facebook and Instagram), and sent emails to its existing mailing list, inviting people to take a free survey "related to long-term success." Individuals who clicked on the invitation were then redirected to an online survey page in Qualtrics, where they completed the HPI assessment, as well as several other self-report items. There were 192,845 survey entries. From this initial pool, we excluded 16,273 participants who did not finish the survey, as well as 3,828 duplicate entries. The final sample ($N = 173,183$) was comprised of adults who were 59% female and 69% White. Sixty-nine percent of the sample were between 21 and 49 years old (See Table 2). It is worth noting that this was a particularly educated participant pool, with 60% of participants completing a four-year college degree (US avg = 33.4%), and 34% of participants completing a graduate degree (US avg = 9.3%).²⁶

The High Performance Indicator. Based on Burchard's qualitative research, investigators defined an *a priori* 6-factor structure. Six items were used for each high performance habit subscale, totaling 36 items for the entire scale. Each item was

Table 1

First Iteration of High Performance Indicator Items

<i>Clarity Items</i>
1. I know what I want - I'm clear about my goals and passions.
2. I know how to get what I want - I have a plan to achieve my dreams.
3. It's hard to make up my mind on many decisions because I don't know what I really want.
4. I know who I am - I'm clear about my values, strengths, and weaknesses.
5. I don't know the steps to accomplish my big goals.
6. I don't know myself well.
<i>Energy Items</i>
7. I feel a lot of negative energy and emotions.
8. I have the physical energy needed to achieve my goals everyday.
9. I have the mental stamina needed to be present and focused throughout the day.
10. In general, I feel cheerful and optimistic.
11. My mind feel slow and foggy.
12. I am physically exhausted too often.
<i>Necessity Items</i>
13. I feel a deep emotional drive and commitment to succeeding, and it consistently forces me to work hard, stay disciplined and push myself.
14. I feel a sense of social obligation and duty - to my family, team or society - to succeed at high levels.
15. I am extremely motivated by deadlines, so I proactively set deadlines to keep me on track.
16. I don't feel very committed to what I'm doing.
17. No one really cares if I succeed or not.
18. I'm sort of obsessed with a specific topic right now, and that obsession helps me succeed.
<i>Productivity Items</i>
19. I'm good at prioritizing and working on what's important.
20. I stay focused and avoid distractions and temptations.
21. I struggle organizing and managing tasks and projects to completion.
22. I'm more productive over the long-term than my peers.
23. I get overwhelmed easily and it stalls my progress.
24. I set goals, but I don't work on them long enough to achieve them.
<i>Influence Items</i>
25. I'm good at persuading people to do things.
26. I have the influence needed to achieve my goals.
27. I'm good at earning people's trust and camaraderie.
28. I often say inappropriate things that hurt my relationships.
29. I struggle to get people to listen to me or do things I ask.
30. I don't have a lot of empathy for other people.
<i>Courage Items</i>
31. I speak up for myself, even when it's hard.
32. I respond quickly to life's challenges and emergencies versus avoiding them.
33. I often take action despite fear.
34. I don't feel like I have the courage to express who I really am.
35. Even if I knew it was the right thing to do, I wouldn't help someone if it meant I would be negatively judged, ridiculed or threatened.
36. I rarely act outside of my comfort zone.

Table 2
Demographic Information for Study 1

	<i>N</i>	% of Sample
<i>Age</i>		
17 or younger	4820	2.8%
18-20	10929	6.3%
21-29	39943	23.1%
30-39	43172	24.9%
40-49	35274	20.4%
50-59	25300	14.6%
60 or older	13453	7.8%
Did not answer	292	0.2%
<i>Gender</i>		
Male	70354	40.7%
Female	102426	59.3%
Did not answer	403	0.2%
<i>Race</i>		
White	119158	69.3%
Black/African American	13500	7.9%
American Indian or Alaskan Native	1840	1.1%
Asian or Pacific Islander	24735	14.4%
Latino/a	12652	7.4%
Did not answer	1298	0.7%
<i>Education</i>		
Primary school	761	0.4%
Some high school	3598	2.1%
High school	18714	10.8%
Some college	28170	16.3%
2-year college	17163	9.9%
4-year college	45527	26.3%
Graduate degree	58994	34.1%

answered using a 5-point Likert scale, ranging from 1 = “Not like me at all” to 5 = “Very much like me.”

Outcome items. The concurrent validity of the HPI was assessed using a variety of self-report measures of outcomes relevant to career success and personal development audiences. These items included measurements of happiness (“I’m happy with my life overall”), confidence (“I’m confident that I can achieve my goals despite resistance”), perceived excellence in performance (“I do things with more excellence than my peers”), higher levels of lifetime schooling (adjusting for age), and an index of perceived success in comparison to peers (see table 3 for items). All items, except for schooling, were

answered using a 5-point Likert scale, ranging from 1 = “Not like me at all” to 5 = “Very much like me.”

Results

Reliability and Dimensionality of the HPI. To test the internal consistency of the items within each HPI subscale, we examined Cronbach’s alpha measure of reliability for each construct. A relatively high degree of internal consistency (e.g. Cronbach’s alpha scores of $> .70$) is important because it indicates that questions are measuring the same construct. As seen in the table below, the majority of subscales had

Table 3

Perceived Success Scale Items

-
1. Most of my peers would consider me a high performer.
 2. Over the past few years, I've generally maintained a high-level of success.
 3. If "high performance" is defined as succeeding at what you do over the long-term, compared to most people, would you identify yourself as a high-performer?
 4. In my primary field of interest, I've had success for a longer period of time than most of my peers.
-

acceptable consistency; however, the Influence and Necessity subscales had moderate internal consistency.

We used principal component analysis to examine the latent grouping of the HPI scale. A varimax rotation with an *a priori* 6-factor cumulatively explained 53.94% of the variance. Although most items grouped together on factors representing their intended subscales, there were several items with cross-loadings, indicating that they did not uniquely represent one construct over another. There were also some items that primarily, or even solely, loaded on factors of different subscales than their intended representation. These results indicated that the internal psychometric properties of the scale could be enhanced in a future iteration.

Because of low reliability of across some subscales and a factor analysis that did not fully support the division of the items into these scales, we looked at an overall index of all 36 HPI items. When measured as a whole, the HPI had an excellent reliability ($\alpha = .94$), suggesting that the 36 items may collectively measure a general "high performance factor"—even though the particular elements of this factor could not be neatly identified. *Concurrent validity of the HPI.* Even though all items in the HPI scale did not fit cleanly into six distinct constructs as originally conceived, we were still interested in whether the HPI composite score predicts any of the important outcome measures. Descriptive results for these outcome measures are reported in Table 5 and in the text below. Descriptive results for education are reported in Table 2.

As hypothesized, the HPI was highly predictive of greater self-reported happiness ($r = .58, p < .001$), confidence ($r = .58, p < .001$), perceived excellence versus peers ($r = .50, p < .001$) and perceived success in comparison to peers ($r = .67, p <$

.001). HPI was also predictive of obtaining higher education (Spearman's $\rho = .137, p < .001$), and similar results were obtained when adjusting for age. These results suggest that, as a whole, the HPI measures a collective pattern of high performance habits that predict meaningful life outcomes.

Despite these results, there were some limitations in the measures used in Study 1. First, although the HPI predicted important outcomes as a whole, the overall factor structure and the internal consistency for the scales of some habits could be improved. Without a solid factor structure and high internal reliability, it is difficult to know what distinct habits the HPI is measuring or whether any particular habit predicts the outcomes listed above. The second limitation was that some outcome variables (e.g. happiness, confidence) were assessed using a single-item self-report measure. Although these

Table 4

Inter-item Reliability Within Subscales

Habit	Cronbach's alpha
Clarity	.85
Energy	.84
Necessity	.69
Productivity	.83
Influence	.67
Courage	.76

Table 5

Descriptive Statistics for Outcome Measures Included to Evaluate Concurrent Validity

Outcome Measure	Mean	SD	Cronbach's alpha
Perceived Long-Term Success Scale	3.76	0.95	.84
Single Item Happiness	3.72	1.25	---
Single Item Confidence	4.27	0.96	---
Single Item Perceived Excellence	3.80	1.03	---

single items were face-valid, using scientifically established scales as outcome measures would provide more robust results than single-item measures.

Finally, it is worth noting to whom these results most strongly apply. As noted previously, participants in Study 1 reported high levels of education. Additionally, each participant in the study responded to social media posts or promotions about a free assessment that was “related to long-term success.” Thus, these results are most representative of educated adults who are already interested in success or personal development.

Study 2

In Study 2, we sought to improve upon the reliability and validity of the HPI by developing several new items, and testing overall factor structure, reliability, and validity of the scale. In addition, we recruited a more nationally representative sample so that results could be generalized beyond traditional personal development audiences.

Our first objective was to create a shorter, face-valid set of items for each HPI habit (see Table 6), and assess whether the new instrument’s items cluster into six distinct constructs as hypothesized. The second objective was to evaluate whether the new instrument items assessing each distinct habit have sufficiently high inter-item reliability to provide a valid assessment of that construct. Third, the convergent validity of each of the six HPI subscales were evaluated through association to existing validated measures of related constructs. Here the objective was to test whether the six HPI subscales measured the intended psychological construct. Fourth, the predictive utility of the HPI was assessed by examining whether overall HPI scores predicted important life outcomes related to high performance (e.g. happiness, career impact, and income).

Method

Sample. A nationally representative sample of U.S. adults was recruited based on four demographic variables: age, gender, income, and geographical location (Table 7). Participants were recruited via Qualtrics Online Samples. Only participants who completed the online assessment in accordance with two quality control criteria were included. The first criterion was an attention check question: “I am actually reading these survey questions rather than just making up answers.” Only data from participants who indicated “Agree” or “Strongly Agree” were included. The second criterion was a speed check. The median time it took to complete the survey during the soft launch was 26.9 minutes. All participants who completed the survey in less than one-third the median time (9.0 minutes) were automatically excluded. Data was collected from 880 participants who passed these criteria. Data from nine

Table 6

Items for the Second Iteration of the High Performance Indicator

<i>Clarity Items</i>
1. I know what I want - I'm clear about my goals and passions.
2. I have clarity about what I want to accomplish in my life.
3. I know exactly what will make me successful in the next three years of my life.
<i>Energy Items</i>
4. I have the energy needed to achieve my goals each day.
5. I feel highly energized every day.
6. I have the stamina needed to be present, enthusiastic, and focused throughout the day.
<i>Necessity Items</i>
7. I feel a deep emotional drive to succeed.
8. I feel a high level of motivation that consistently forces me to work hard, stay disciplined, and push myself.
9. I work exceptionally hard because I know there are many rewards to reap from success.
<i>Productivity Items</i>
10. I'm good at prioritizing and working on what's important.
11. I'm good at being productive on the things that really count.
12. I'm consistently productive over the long-term.
<i>Influence Items</i>
13. I'm good at persuading people to do things.
14. I have strong leadership skills.
15. People in my network or life would describe me as highly influential.
<i>Courage Items</i>
16. I speak up for myself, even when it's hard.
17. I respond quickly to life's challenges and emergencies versus avoiding them.
18. I anticipate that new situations will involve difficulty or struggle and I'm comfortable with that.

respondents were excluded for inaccurate responding based on their providing implausible answers to the height and weight questions (e.g. 4'0" tall and 350 pounds). The final sample comprised 871 participants.

Measures. To assess the convergent validity of each of the six HPI subscales, participants completed a series of validated questionnaires measuring similar constructs. Two existing questionnaires were included for each of the six habits. Additionally, several outcome measures were included to assess the concurrent validity of the HPI. These outcome

measures included both validated questionnaires and objective measures of level of education, income, and body mass index.

Self-Concept Clarity. This twelve-item scale measures self-awareness and stability.²⁷ It was included to assess convergent validity with the clarity subscale. Sample items include, “In general, I have a clear sense of who I am and what I am” and “I spend a lot of time wondering about what kind of person I really am” (reverse scored).

Purpose in Life. This nine-item measure assesses the degree to which a person feels like their goals, plans, and activities align with what they want in their future.²⁸ It was included to assess convergent validity with the clarity subscale. Sample items include: “Some people wander aimlessly through life but I am not one of them” and “I enjoy making plans for the future and working to make them a reality.”

Physical Energy. This five-item measure assesses the degree to which one has felt fatigued versus full of energy over the last month.²⁹ It was included to assess convergent validity with the energy subscale. Participants were instructed to think back over the last four weeks and report how much time they spent feeling various ways. Sample items include: “Did you feel full of pep?” and “Did you feel worn out?” (reverse scored).

Liveliness. This ten-item measure examines vibrancy and stamina.³⁰ It was included to assess convergent validity with the energy subscale. Sample items include: “I maintain high energy throughout the day” and “I feel healthy and vibrant most of the time.”

Achievement Striving. This seven-item scale assesses the degree to which one works passionately and with high standards.³⁰ It was included to assess convergent validity with the necessity subscale. Sample items include: “I plunge into tasks with all my heart” and “I do more than what’s expected of me.”

Competitive Drive. This six-item scale measures one’s drive to take on new challenges.³⁰ It was included to assess convergent validity with the necessity subscale. Sample items include: “I accept challenging tasks” and “I am not highly motivated to succeed” (reverse scored).

Diligence. This ten-item questionnaire assesses the degree to which one works diligently and successfully.³⁰ It was included to assess convergent validity with the productivity subscale. Sample items include: “I get started quickly on doing a job” and “I complete tasks successfully.”

Industriousness & Perseverance. This eight-item measure examines persistence and the tendency to finish entire tasks.³⁰ It was included to assess convergent validity with the productivity subscale. Sample items include: “I finish things despite obstacles in the way” and “I don’t get sidetracked when I work.”

Social Skills. This seven-item measure assesses sociability and interpersonal skills.³¹ It was included to assess convergent validity with the influence subscale. Participants responded to items such as, “I find it easy to put myself in the

Table 7

Demographic Information for Study 2

	<i>N</i>	% of Sample
<i>Age</i>		
18-24	114	13.1%
25-34	130	14.9%
35-44	156	17.9%
45-54	159	18.3%
55-64	146	16.8%
65 or older	166	19.1%
<i>Gender</i>		
Male	433	49.7%
Female	438	50.3%
<i>Income</i>		
\$0 - \$25,000	153	17.6%
\$25,000 - \$50,000	198	22.7%
\$50,000 - \$75,000	165	18.9%
\$75,000 - \$100,000	120	13.8%
\$100,000 - \$150,000	133	15.3%
\$150,000 - \$200,000	62	7.1%
\$200,000 or more	40	4.6%
<i>Geographical Location</i>		
Midwest/Central	190	21.8%
Northeast	158	18.1%
South	312	35.8%
West	211	24.2%

position of others” and “in social situations, it is always clear to me exactly what to say and do.”

Leadership. This seven-item measure assesses one’s leadership ability.³¹ It was included to assess convergent validity with the influence subscale. Participants responded to items such as, “I am told that I am a strong but fair leader” and “I am not good at taking charge of a group” (reverse scored).

Courage. This six-item measure is an abbreviated version of Norton and Weiss’s 2009 Courage Scale which examines valor in the face of one’s fears.³² It was included to assess convergent validity with the courage subscale. Participants responded to items such as, “I tend to face my fears” and “If there is an important reason to face something that scares me, I will face it.”

Bravery. This ten-item measure examines bravery and was included to further assess convergent validity with the courage subscale.³² Participants responded to items such as, “I

am a brave person” and “I avoid dealing with uncomfortable situations” (reverse scored).

Life Satisfaction. This five-item measure assesses well-being with respect to one’s overall satisfaction with life.³³ Participants responded to items such as, “In most ways my life is close to my ideal” and “If I could live my life over, I would change almost nothing.”

Positive Relationships. This nine-item Positive Relations with Others Scale is a subscale of a more general well-being measure,²⁸ and it specifically examines the degree to which someone has strong interpersonal connections. Sample items include: “I know that I can trust my friends, and they know they can trust me” and “I have not experienced many warm and trusting relationships with others” (reverse scored).

Work Quality. This three-item measure is a subscale of a longer questionnaire assessing subjective career success.³⁴ Specifically, it examines the degree to which an individual produces high quality work. Sample items include: “I have met the highest standards of quality in my work” and “I have been known for the high quality of my work.”

Career Impact. This three-item measure is also a subscale of the longer questionnaire assessing subjective career success.³⁴ It assesses the degree to which an individual believes their work matters to the world. Participants responded to items such as, “I think my work has been meaningful” and “The work I have done has contributed to society.”

Income. Participants were also asked about their total household income. Options included (1) \$0 - \$25,000, (2) \$25,000 - \$50,000, (3) \$50,000 - \$75,000, (4) \$75,000 - \$100,000, (5) \$100,000 - \$150,000, (6) \$150,000 - \$200,000, or (7) \$200,000+.

Education. Participants were asked to indicate their highest level of education. Options included (1) less than high school diploma, (2) high school diploma/GED, (3) some college (no degree), (4) associate’s degree, (5) bachelor’s degree, or (6) graduate degree.

Body Mass Index (BMI). As a proxy for physical health, participants were asked their height and weight so that a BMI score could be calculated for each individual. Inches and pounds were converted to meters and kilograms. Kilograms were then divided by meters squared.

Results

Factor analysis. The dimensionality of the HPI was evaluated using principal component analysis with varimax rotation. Consistent with the high performance framework, researchers defined an *a priori* 6-factor structure. The six factors cumulatively explained 51.78% of the variance. All items loaded on the correct factor with a loading of at least .40 (Table 8). Additionally, no items loaded above .40 on other factors. These results confirmed that the habits represent six distinct dimensions.

Reliability. As shown in Table 9, each subscale was highly reliable, particularly for 3-item subscales given that reliability estimates tend to become larger as the number of items increases. As mentioned in Study 1, a Cronbach’s alpha score of $> .70$ is important because it indicates that questions are measuring the same construct.

Convergent validity. In order to assess the convergent validity of the HPI subscales, we first calculated composite scores for each habit. Higher scores on the 1-6 scale (strongly disagree to strongly agree) indicate a greater presence of the habit. Two validated scales for each habit were administered to assess the extent to which the HPI subscale scores correlated with similar constructs. Initial analyses first confirmed that all of the previously validated scales had sufficient inter-item reliability with the current sample. Descriptive results for these twelve measures are provided in Table 10. Next, we assessed the correlation between each validated questionnaire and its corresponding high performance habit subscale. Moderately strong correlations (e.g. correlation coefficients of $r = .30$ to $.70$) indicate good convergent validity, providing evidence that the instrument successfully measures the intended construct. Extremely high correlations (e.g. $> .80$) are not necessary since the measures are tapping into similar but not identical psychological constructs.

The Energy subscale correlated with both Physical Energy ($r = .61, p < .001$) and Liveliness ($r = .77, p < .001$). The Necessity subscale correlated with both Achievement Striving ($r = .73, p < .001$) and Competitive Drive ($r = .33, p < .001$). The Productivity subscale correlated with both Diligence ($r = .41, p < .001$) and Industriousness and Perseverance ($r = .48, p < .001$). The Influence subscale correlated with both Social Skills ($r = .76, p < .001$) and Leadership ($r = .44, p < .001$). The Courage subscale correlated with both Courage ($r = .66, p < .001$) and Bravery ($r = .50, p < .001$). Collectively, these results provide strong evidence for the convergent validity of these five subscales.

The Clarity subscale correlated with Purpose in Life ($r = .29, p < .001$), but it did not correlate with Self-Concept Clarity ($r = .05, p = .15$). The first correlation with Purpose in Life offers moderate evidence for the convergent validity of the Clarity subscale. The absence of a positive correlation with the Self-Concept Clarity scale may be due to that instrument’s emphasis on the stability of the self-concept over time, or perhaps the assumption that reflecting on oneself is a signal of low clarity. In contrast, the Clarity subscale of the HPI emphasizes that high performers consistently seek evolving clarity as times change and as they take on new projects or enter new social situations. Future research could administer other validated scales that are more conceptually similar to the construct of clarity as conceived by the HPI in order to further test this subscale’s convergent validity.

HPI construct validity. The next step was to assess the appropriateness of creating an HPI composite score that averaged across the six subscales.

Table 8

Descriptive Statistics and Factor Loadings for Each HPI Item

Item	Mean	SD	Loading
<i>Clarity</i>			
I know what I want—I'm clear about my goals and passions.	4.85	1.08	.72
I have clarity about what I want to accomplish in my life.	4.85	1.10	.72
I know exactly what will make me successful in the next three years of my life.	4.50	1.33	.66
<i>Energy</i>			
I have the energy needed to achieve my goals each day.	4.54	1.28	.78
I feel highly energized every day.	4.06	1.45	.79
I have the stamina needed to be present, enthusiastic, and focused throughout the day.	4.59	1.23	.72
<i>Necessity</i>			
I feel a deep emotional drive to succeed.	4.59	1.30	.70
I feel a high level of motivation that consistently forces me to work hard, stay disciplined, and push myself.	4.67	1.15	.70
I work exceptionally hard because I know there are many rewards to reap from success.	4.70	1.18	.70
<i>Productivity</i>			
I'm good at prioritizing and working on what's important.	4.97	0.98	.73
I'm good at being productive on the things that really count.	5.03	0.90	.74
I'm consistently productive over the long-term.	4.87	1.03	.62
<i>Influence</i>			
I'm good at persuading people to do things.	4.38	1.24	.77
I have strong leadership skills.	4.51	1.33	.75
People in my network or life would describe me as highly influential.	4.23	1.29	.68
<i>Courage</i>			
I respond quickly to life's challenges and emergencies versus avoiding them.	4.71	1.08	.70
I anticipate that new situations will involve difficulty or struggle and I'm comfortable with that.	4.54	1.19	.46
I speak up for myself, even when it's hard.	4.75	1.09	.77

Although each subscale measures a distinct construct, these six habits were conceived as complementary components of the broader construct of high performance. Accordingly, we evaluated the inter-construct reliability across the six habits. Reliability was operationalized as the inter-construct correlations across the subscales. Following established standards for interpreting these correlations³⁵, these findings support the integration of the six habits into one overall High Performance Indicator score (Fisher Adjusted *Mean r* = .64, *Min* = .55, *Max* = .72, Table 11). Descriptive statistics for the six habits are included in Table 11.

Table 9

Inter-item Reliability Analyses Within Subscales

Habit	Cronbach's alpha
Clarity	.83
Energy	.87
Necessity	.85
Productivity	.78
Influence	.83
Courage	.74

Table 10

Descriptive Statistics for Measures Included to Evaluate Convergent Validity

Measure for Convergent Validity (Range)	Mean	SD	Cronbach's alpha
<i>Clarity</i>			
Self-Concept Clarity (1-6)	3.79	1.23	.93
Purpose in Life (1-6)	4.05	0.98	.83
<i>Energy</i>			
Physical Energy (1-6)	3.81	1.07	.83
Liveliness (1-5)	3.67	0.79	.87
<i>Necessity</i>			
Achievement Striving (1-5)	4.21	0.67	.90
Competitive Drive (1-5)	3.70	0.76	.70
<i>Productivity</i>			
Diligence (1-5)	3.91	0.77	.85
Industriousness & Perseverance (1-5)	4.00	0.72	.80
<i>Influence</i>			
Social Skills (1-6)	4.44	0.98	.89
Leadership (1-5)	3.70	0.74	.78
<i>Courage</i>			
Courage (1-6)	4.51	0.96	.88
Bravery (1-5)	3.52	0.71	.79

Table 11

Correlations Between HPI Subscales

Habit	1	2	3	4	5	6
1. Clarity	-	.65**	.72**	.66**	.62**	.63**
2. Energy		-	.66**	.62**	.63**	.59**
3. Necessity			-	.65**	.66**	.64**
4. Productivity				-	.59**	.66**
5. Influence					-	.66**
6. Courage						-
<i>Mean</i>	4.73	4.40	4.65	4.95	4.37	4.67
<i>SD</i>	1.02	1.18	1.06	0.81	1.11	0.91

Note. Standardized correlations between HPI subscales. *** = $p < .001$; ** = $p < .01$; * = $p < .05$.

Table 12

Descriptive Statistics for Measures Included to Evaluate Concurrent Validity

Outcome Measure (Range)	Mean	SD	Cronbach's alpha
Satisfaction with Life (1-6)	4.24	1.23	.91
Positive Relationships (1-6)	4.13	0.97	.84
Work Quality (1-6)	5.09	1.00	.90
Career Impact (1-6)	4.90	1.14	.91

Concurrent validity. The next step in the validation process was to determine whether the HPI composite score predicts any of the outcome measures. Descriptive results for these outcome measures are reported in Table 12 and in the text below. Descriptive results for income and education are reported in Table 13.

Level of Education. Seventeen-percent of our participants reported finishing a graduate degree, 25% completed a bachelor's degree, 10% finished an associate's degree, 24% completed some college but did not graduate, 23% finished high school, and 2% completed some high school training.

Body Mass Index (BMI). According to the National Institute of Health, the healthy range for BMI scores is between 18.5 and 24.9. Scores lower than 18.5 are considered underweight. Scores between 25 and 29.9 are considered overweight, and scores above 30 are considered obese. In the current sample, the mean BMI is 28.40 ($SD = 7.75$; Min: 14.38, Max: 66.37).

HPI relationship with important life outcomes. Linear regression models were used to examine the association between HPI scores and each of the continuous outcome measures (Satisfaction with Life, Positive Relationships, Work Quality, Career Impact, and BMI). Specifically, we looked at zero-order correlations between HPI and these outcomes, as well as the semi-partial correlation with these outcomes when adjusting for age, gender and geographical location. Spearman's rho and ordinal regression models were used (also adjusting for age, gender and geographical location) to examine the relationship of HPI with the discrete outcome measures of Level of Education and Income Bracket.

As shown in Table 13, HPI scores significantly predicted life satisfaction. Individuals with higher HPI scores tended to be more satisfied with their life. HPI scores uniquely explained 34.3% of the variance in Satisfaction with Life when adjusting for age, gender and geographical location.

Table 13

Linear Regressions of HPI Predicting Important Life Outcome Measures

Outcome Measure (Range)	Pearson's (zero order) correlation	p	Semi partial correlation	p	% of variance uniquely explained
Satisfaction with Life (1-6)	.62	<.001	.59	<.001	34.3%
Positive Relationships (1-6)	.22	<.001	.32	<.001	9.9%
Work Quality (1-6)	.60	<.001	.63	<.001	39.8%
Career Impact (1-6)	.58	<.001	.61	<.001	37.2%
BMI	-.07	.063	-.06	.091	0.4%

Note. Important life outcome measures regressed on HPI using ordinary least-squares regression. Semi-partial correlations adjust for age, gender, and geographic location.

Similarly, HPI scores also predicted better personal relationships, career impact, and work quality. Overall, HPI scores uniquely explained 9.9% of the variance in Positive Relationships, 39.8% of the variance in Work Quality, and 37.2% of the variance in Career Impact. HPI scores, however, were not significantly predictive of BMI.

As seen in Figure 1 and Table 14, HPI was predictive of higher income bracket, even and when adjusting for age, gender, and geographic location. HPI, however, was not significantly predictive of education level. Although when adjusting for age, gender, and geographic location in an ordinal regression there was a marginally significant relationship of HPI predicting higher education levels.

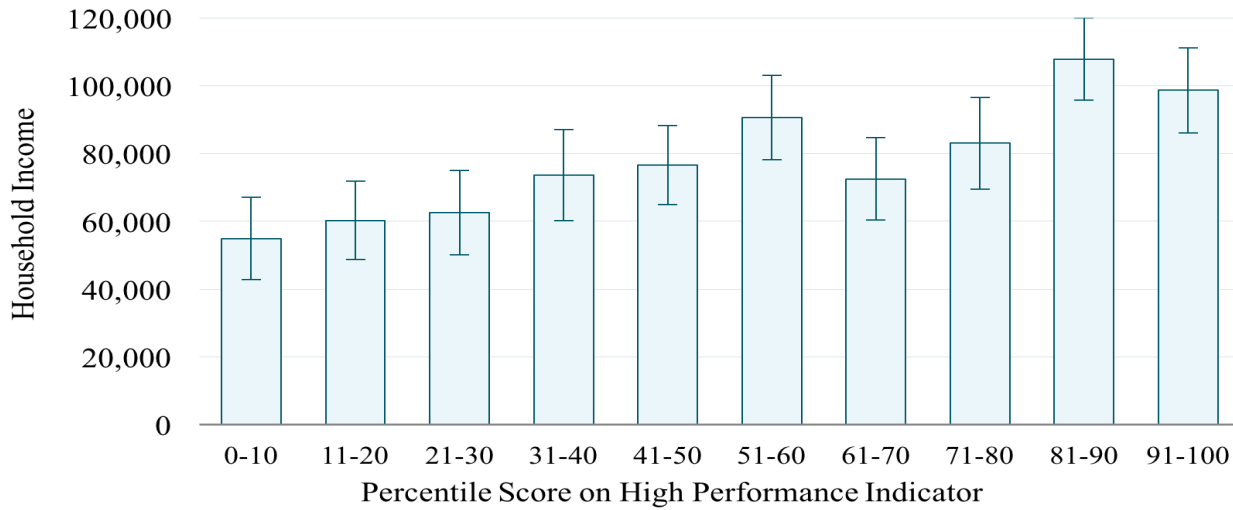


Figure 1. High Performance Indicator Predicts Income

Table 14

Spearman's Rho Correlation Between HPI and Success Measures

Outcome Measure	Spearman's correlation	<i>p</i>	Ordinal regression estimate (SE)	<i>p</i>
Education Level	.04	.232	0.136 (.074)	.065
Income Bracket	.23	<.001	0.390 (.075)	<.001

Note. Ordinal regression estimates adjust for age, gender, and geographical location.

General Discussion

The High Performance Indicator (HPI) is an assessment tool that is designed to measure six habits thought to underlie high performance: clarity, energy, necessity, productivity, influence, and courage. The present findings indicate that the HPI's factor structure is consistent with the instrument's intention to measure these six distinct constructs. Each subscale of the HPI demonstrated good inter-item reliability (αs from .74 to .87) and convergent validity with existing measures of related construct (*r*s from .29 to .77). Finally, overall scores on the HPI uniquely predicted variance in important life outcomes such as happiness (34.3%) quality of interpersonal relationships (9.9%), career impact (37.2%), and work quality (39.8%). The HPI was also significantly correlated with income (*r*s = .23). Collectively, these findings provide evidence that the HPI is a reliable and valid measure of six distinct but complementary high performance habits.

Many leaders in the field of personal development promise that their programs will lead to positive change. However, devoid of a valid measurement tool, claims about improvement cannot be substantiated. Frameworks or theories that rely on

anecdotes, rather than data, should be viewed with skepticism. Without reliable measurement, our understanding of any concept lacks precision. In the words of Lord Kelvin,

When you can measure what you are speaking about, and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in numbers, your knowledge is of a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the stages of science, whatever the matter may be.³⁶

The HPI measures high performance habits in trackable, reliable numbers—advancing the *High Performance Habits* framework beyond the scope of mere advice, into the realm of science.

Used intelligently, the HPI may help people to better understand high performance across a variety of life domains. Unlike traditional measures of achievement, the HPI was conceptually designed to measure qualities that *lead* to, rather than *reflect*, high performance. In management science, outcome measures are called “lagging indicators” because, by the time an outcome is measured, the actions that led to the outcome have already taken place.³⁷ Leading indicators, on the

other hand, provide useful information about the attitudes and behaviors that produce success. Although more empirical work needs to be done to establish a causal link between each high performance habit and important outcome measures, the present research provides suggestive evidence that changing behavior on these habits may lead to positive outcomes.

Practical Application of the HPI

The HPI can be used both as a summative and formative measurement tool. It is summative in that it provides a reliable sense of how people are performing across each high performance habit. It is formative in the sense that it can help identify areas of weakness and help them create plans to develop better habits. These benefits may be particularly useful to individuals, coaches, and organizations who are seeking to enhance performance in behaviorally measurable ways.

Individuals can use the HPI as a self-monitoring tool. Since the eighteenth century, at least, personal development leaders have recognized the benefit of regularly measuring one's behavior in relation to goals.³⁸ More recently, social scientists have demonstrated the extensive motivational and behavioral benefits associated with self-monitoring. e.g. ^{39,40,41} For example, self-monitoring makes one more likely to seek out information that can benefit them,^{42,43} and more likely to live in alignment with personal standards for health,⁴⁴ work ethic,⁴⁵ and morality.^{46,47} Consistent with this vast body of literature, we argue the the HPI may be profitably used by those who wish to track and improve their personal high performance.

The HPI is also a highly useful tool for high performance coaches. Coaches can utilize the HPI in at least three ways: First, they can give their clients the HPI as a self-assessment tool, enabling them to reap the aforementioned benefits of self-monitoring. Second, coaches who use the HPI will have greater insight into their clients unique needs. Numerous studies conducted with clinical psychologists have found that client outcomes are improved when clinicians use valid measurement tools.⁴⁸ Conversely, when measurement tools are not utilized, therapists significantly underestimate the number of clients whose conditions will deteriorate.⁴⁹ Although there are important differences between clinical psychotherapy and high performance coaching, it seems likely that the benefits of data-driven client assessment would translate across both fields. The third way coaches can use the HPI is as a feedback mechanism for their own effectiveness. Feedback is essential to the development of expertise in a wide array of domains e.g. ^{50,51,52} It is likely that this same pattern would hold true for coaches. The more coaches know about the effectiveness of their strategies, the better they will be able to adjust and optimize their sessions.

Finally, organizations may benefit from using the HPI, as it correlates with important workplace objectives like quality of work and career impact. Though we do not suggest that the HPI be used as a hiring tool (because self-report measures are

often faked in high stakes contexts), there are several other contexts in which it may be helpful for employee development and organizational effectiveness. For example, when taken anonymously, or in other ways that are deemed “no-risk” for employees, the HPI can be used to measure behaviors associated with habits that improve relationships and employee effectiveness. Executives and managers can use the HPI to gain a better “pulse” of the organization and whether or not individual efforts are leading to long-term success. Measured over time, the HPI can help leaders track the degree to which different initiatives positively or negatively impact the high performance of employees. Additionally, the HPI can help managers identify areas of strength and weakness in their teams, and may provide clues to help them enhance employee behavior for better long-term results.

Limitations and Future Directions

There are several limitations to the present research. First, even though clarity, energy, necessity, productivity, influence, and courage emerged as the most common high performance habits in our qualitative analysis, it is possible that there are other, equally impactful behaviors. In the future we will conduct research to learn whether other habits should be included in the high performance framework. Second, because these analyses were correlational, rather than experimental or longitudinal, evidence about the causality of the high performance habits on success is suggestive rather than confirmatory. In the future, we intend to conduct both longitudinal and experimental studies to learn the degree to which different high performance habits lead to specific success outcomes. Third, though we have considerable qualitative data showing that these habits are malleable, we currently have limited empirical evidence demonstrating that people can improve across the six HPI measures. However, it is worth noting that the *High Performance Institute* is currently undergoing several investigations to ascertain the degree to which its programs and products improve our students' overall high performance. One preliminary study has already been completed, and results indicate that each high performance habit can be substantially enhanced by attending training events or seminars. Further information on this report is available in supplementary materials.

Conclusion

Over two thousand years ago, Aristotle concluded that excellence was the result of habit. Our research suggests the same. The HPI measures six habits that are reliably associated with high performance. They are also the six habits that the High Performance Institute currently includes in its training curriculum to millions of students around the world. Supplementing high performance training with a scientifically valid measurement tool is an important and much needed first

step for the field of personal development. The High Performance Indicator reliably assesses the quality of an individual's habits across six key areas associated with long-term success and positive life outcomes. Wise use of the HPI can help individuals, coaches, and organizations better understand their current performance, as well as provide useful guidance and feedback about how performance can be optimized in the future.

References

1. Seligman, M. E. P. (1991). *Learned optimism* (First Vintage eBook ed.). New York: Vintage.
2. Greenwald, A. G., Spangenberg, E. R., Pratkanis, A. R., & Eskenazi, J. (1991). Double-blind tests of subliminal self-help audiotapes. *Psychological Science*, 2(2), 119-122.
3. Rosen, G. M. (1993). Self-help or hype? Comments on psychology's failure to advance self-care. *Professional Psychology: Research and Practice*, 24(3), 340-345. doi:10.1037/0735-7028.24.3.340
4. Chabris C. F. & Simons, D. J. (2010, September 24). Fight 'the power.' *The New York Times*. Retrieved from: <https://www.nytimes.com/2010/09/26/books/review/Chabris-t.html>, pp. 1A, 2A.
5. Schnall, M. (2017, December 6) 'Growing and Giving': An Interview With Tony Robbins. *The Huffington Post*. Retrieved from: https://www.huffingtonpost.com/marianne-schnall/growing-and-giving-an-int_b_4218532.html
6. Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *American Psychologist*, 60(5), 410.
7. Seligman, M. E., & Csikszentmihalyi, M. (2000). *Positive psychology: An introduction* (Vol. 55, No. 1, p. 5). American Psychological Association.
8. Pink, D. H. (2011). *Drive: The surprising truth about what motivates us*. New York: Penguin.
9. Newport, C. (2016). *Deep work: Rules for focused success in a distracted world*. New York: Grand Central Publishing.
10. Duhigg, C. (2012). *The power of habit: Why we do what we do in life and business*. New York: Random House.
11. Booth, H. (2017). How self-help is getting a millennial makeover (and how to use it to live your best life). *Stylist*. Retrieved from: <https://www.stylist.co.uk/books/best-self-help-books-anxiety-wellness-depression/130168>
12. Ferran, L. (2010, February 3). James Ray Arrested in Sedona Sweat Lodge Deaths. *ABC News*. Retrieved from: <https://abcnews.go.com/GMA/spiritual-leader-james-ray-arrested-sweat-lodge-deaths/story?id=9741781>
13. Bryner, J. & Pappas, S. (2012, December 26). 12 obvious science findings of 2012. *Scientific American*. Retrieved from: <https://www.scientificamerican.com/article/12-obvious-science-findings/>
14. Robbins, A. (1986/2003). *Unlimited power: The new science of personal achievement*. New York: Simon and Shuster.
15. Carney, D. R., Cuddy, A. J., & Yap, A. J. (2010). Power posing: Brief nonverbal displays affect neuroendocrine levels and risk tolerance. *Psychological science*, 21(10), 1363-1368.
16. Hill, N. (1937/1983). *Think and grow rich*. New York: Fawcett Crest.
17. Abramson, L. Y., Seligman, M. E., & Teasdale, J. D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, 87(1), 49.
18. Peter Harvey (2001). *Buddhism*. Bloomsbury Academic. p. 247. ISBN978-1-4411-4726-4.
19. Fredrickson, B. L., Cohn, M. A., Coffey, K. A., Pek, J., & Finkel, S. M. (2008). Open hearts build lives: positive emotions, induced through loving-kindness meditation, build consequential personal resources. *Journal of Personality and Social Psychology*, 95(5), 1045.
20. Beveridge, W. I. B. (1950). *The art of scientific investigation*. New York: Vintage
21. Burchard, B. (2017). *High Performance Habits: How Extraordinary People Become that Way*. Carlsbad, CA: Hay House, Inc.
22. Ericsson, K. A., & Smith, J. (1991). Prospects and limits in the empirical study of expertise: An introduction. In K. A. Ericsson & J. Smith (Eds.), *Toward a general theory of expertise: Prospects and limits* (pp. 1-38). Cambridge: Cambridge University Press.
23. Moffitt, T. E., Arseneault, L., Belsky, D., Dickson, N., Hancox, R. J., Harrington, H., ... & Sears, M. R. (2011). A gradient of childhood self-control predicts health, wealth, and public safety. *Proceedings of the National Academy of Sciences*, 108(7), 2693-2698.
24. Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality*, 72(2), 271-322.
25. Verplanken, B., & Aarts, H. (1999). Habit, attitude, and planned behaviour: is habit an empty construct or an interesting case of goal-directed automaticity?. *European Review of Social Psychology*, 10(1), 101-134.
26. Wilson, R. (April 3, 2017). Census: More Americans have college degrees than ever before. *The Hill*. Retrieved from: (<https://thehill.com/homenews/state-watch/326995-census-more-americans-have-college-degrees-than-ever-before>)
27. Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, 70(1), 141.
28. Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069.
29. Stanford Medicine (Cited 2017, January 27). *Self-Rated Health: Research instruments developed, adapted or used by the Stanford patient education research center*. Retrieved from: <http://patienteducation.stanford.edu/research/generalhealth.html>
30. Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. *Personality Psychology in Europe*, 7(1), 7-28.
31. Ferris, G. R., Witt, L. A., & Hochwarter, W. A. (2001). Interaction of social skill and general mental ability on job performance and salary. *Journal of Applied Psychology*, 86(6), 1075.
32. Howard, M. C., & Alipour, K. K. (2014). Does the courage measure really measure courage? A theoretical and empirical evaluation. *The Journal of Positive Psychology*, 9(5), 449-459.
33. Diener, E. D., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49(1), 71-75.
34. Shockley, K. M., Ureksoy, H., Rodopman, O. B., Poteat, L. F., & Dullaghan, T. R. (2016). Development of a new scale to measure

- subjective career success: A mixed-methods study. *Journal of Organizational Behavior*, 37(1), 128-153.
35. Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological assessment*, 7(3), 309.
 36. W. Thomson. (1891). *Popular lectures and addresses* (Vol. 1). Macmillan and Company.
 37. Horngren, C. T. (2004). Management accounting: some comments. *Journal of Management Accounting Research*, 16(1), 207-211.
 38. Franklin, B. (1791/2007). *The Autobiography of Benjamin Franklin: 1706-1757* (Vol. 1). Regnery Publishing: Washington D.C..
 39. Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes* 50(2), 248-287.
 40. Bandura, A. & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology*, 45(5), 1017.
 41. Harkin, B., Webb, T. L., Chang, B. P., Prestwich, A., Conner, M., Kellar, I., ... & Sheeran, P. (2016). Does monitoring goal progress promote goal attainment? A meta-analysis of the experimental evidence. *Psychological Bulletin*, 142(2), 198.
 42. Carver, C. S. & Scheier, M. F. (1982). Control theory: A useful conceptual framework for personality—social, clinical, and health psychology. *Psychological Bulletin*, 92(1), 111.
 43. Scheier, M. F., & Carver, C. S. (1983). Self-directed attention and the comparison of self with standards. *Journal of Experimental Social Psychology*, 19(3), 205-222.
 44. Teixeira, P. J., Carraça, E. V., Marques, M. M., Rutter, H., Oppert, J. M., De Bourdeaudhuij, I., ... & Brug, J. (2015). Successful behavior change in obesity interventions in adults: a systematic review of self-regulation mediators. *BMC Medicine*, 13(1), 84.
 45. R.K. Hester and H.D. Delaney, "Behavioral Self-Control Program for Windows: Results of a Controlled Clinical Trial," *Journal of Consulting and Clinical Psychology* 65, no. 4 (August 1997): 686-693; and B.J. Zimmerman and A.S. Paulsen, "Self-Monitoring During Collegiate Studying: An Invaluable Tool for Academic Self-Regulation," *New Directions for Teaching and Learning* 63 (fall 1995): 13-27.
 46. Gibbons, F. X. (1978). Sexual standards and reactions to pornography: Enhancing behavioral consistency through self-focuses attention. *Journal of Personality and Social Psychology*, 36(9), 976.
 47. Carver, C.S. (1975). Physical aggression as a function of objective self-awareness and attitudes toward punishment. *Journal of Experimental Social Psychology*, 11(6), 510-519.
 48. Lambert, M. J. (2015). Progress feedback and the OQ-system: The past and the future. *Psychotherapy*, 52(4), 381.
 49. Hannan, C., Lambert, M. J., Harmon, C., Nielsen, S. L., Smart, D. W., Shimokawa, K., & Sutton, S. W. (2005). A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology*, 61(2), 155-163.
 50. Ericsson, K. A. (2004). Deliberate practice and the acquisition and maintenance of expert performance in medicine and related domains. *Academic Medicine*, 79(10), S70-S81.
 51. Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological review*, 100(3), 363.
 52. Duckworth, A. L., Kirby, T. A., Tsukayama, E., Berstein, H., & Ericsson, K. A. (2011). Deliberate practice spells success: Why grittier competitors triumph at the National Spelling Bee. *Social Psychological and Personality Science*, 2(2), 174-181.
 53. Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC Public Health*, 13(1), 119.

Supplemental Study: Evidence for Habit Change through High Performance Training

Method

In the fall of 2018, $N = 532$ attendees of a High Performance Institute training event voluntarily completed an online HPI assessment before and after attending the seminar. From this group, 452 students completed the HPI in the week leading up to the event, 134 students completed the HPI in the week following the event, and 102 students completed the HPI two-to-four weeks following the event. From these samples, $n = 109$ students completed the HPI before and after the High Performance Institute event, called High Performance Academy. Because we were interested in pre-event to post-event changes, the $n = 423$ participants who did not complete both assessments were excluded from this analysis.

Results and Discussion

As shown in **Figure 2**, there were substantial improvements from pre- to post among those that took the assessment in the week following the event (T2), as well as those who took the assessment two-to-four weeks following the event (T3). Paired-samples t-tests showed that overall high performance improved more than a full standard deviation ($d = 1.04$, $p < .001$) from pre-event to post-event scores. Improvements were also seen across each of the high performance habits individually as follows: Clarity ($d = 0.72$, $p < .001$), Energy ($d = 0.72$, $p < .001$), Necessity ($d = 0.83$, $p < .001$), Productivity ($d = 0.63$, $p < .001$), Influence ($d = 0.78$, $p < .001$), and Courage ($d = 0.73$, $p < .001$).

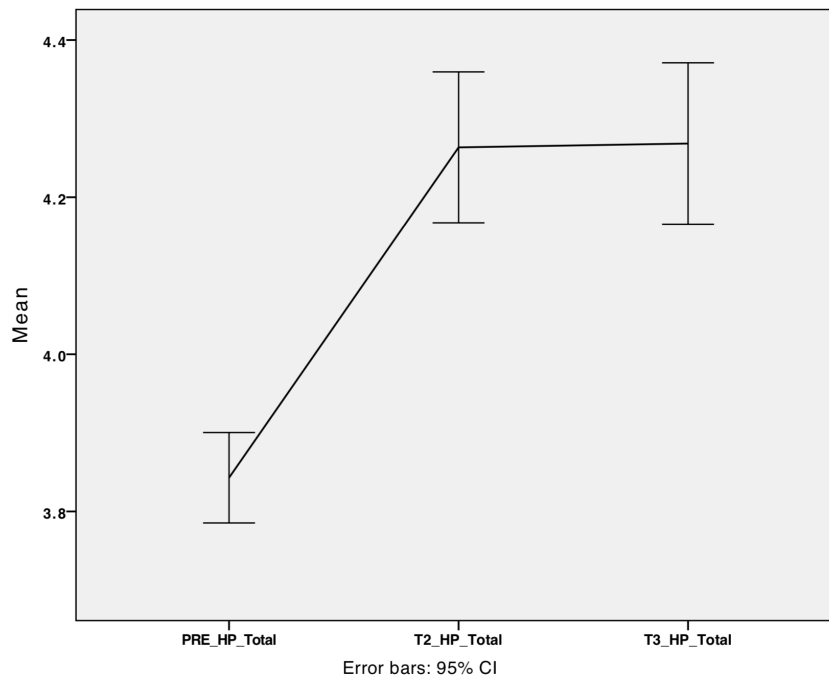


Figure 2. Improvements in overall HPI scores from before High Performance Academy (T1) to one week following (T2) and two-to-four weeks (T3) following the event.

Summary

These data suggest that attending High Performance Academy substantially improves the overall quality of daily performance in students' lives. **The effect of overall improvement ($d = 1.04$) was substantially larger than are usually seen in positive psychology interventions, which normally range from about $d = 0.3$ to $d = 0.5$.**⁵³ This evidence supports the hypothesis that interventions available through personal development platforms may yield larger

psychological, emotional, and behavioral improvements than many of the interventions that come from scientists themselves. In the future, we will continue to measure the behavioral changes of students as they access High Performance Institute seminars, online courses, and one-on-one coaching services.