

Be the Change:
How Living with Virtue Contributes to the Collective Good

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I. Abstract

The vast majority of humans yearn for a better world. Underlying that desire is a hope that *others* will be better. We want politicians to act with integrity; social media CEOs to prioritize our mental health; energy executives to care for our planet; romantic partners to understand our needs; children to spend less time online. In short, we want people to live more virtuously. But how do go about achieving this? I believe Gandhi's teachings provide the answer. He taught that we *need not wait* for others to change, instead, we can *be the change* that we are seeking. Gandhi believed humans are interconnected and that when one person changes, the collective also changes. To some, this might sound far-fetched, but scientific research is emerging that demystifies this wisdom. This paper underscores the benefits to the collective when individuals live with virtue. It begins with a review of Gandhi's life, then highlights research related to sustainable behavior change, and culminates with an amalgamation of research that demonstrates behavior contagion from individuals to the collective. As we strive to create a better world for future generations, we'd be smart to *be the change* that we are seeking.

Keywords: virtue, character, character strengths, behavior change, prosocial behavior, social contagion, elevation, cooperation, altruism, positive psychology

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III. Table of Contents

I. ABSTRACT	2
II. ACKNOWLEDGEMENTS.....	3
III. TABLE OF CONTENTS	5
IV. PREFACE	7
V. OVERVIEW OF POSITIVE PSYCHOLOGY	9
VI. INTRODUCTION.....	12
VII. BE THE CHANGE	14
INTRODUCTION: BE THE CHANGE	14
THE LIFE OF MAHATMA GANDHI.....	15
<i>Gandhi Lived the ‘Be the Change’ Ethos.....</i>	<i>16</i>
<i>Gandhi’s Lasting Influence.....</i>	<i>19</i>
<i>Gandhi’s Superpower: Soul Force</i>	<i>19</i>
<i>Gandhi’s Wisdom Is Echoed Within Wisdom Traditions.....</i>	<i>20</i>
ANCIENT WISDOM: PERSPECTIVES ON <i>BE THE CHANGE</i>	21
<i>Hinduism</i>	<i>21</i>
<i>Buddhism</i>	<i>21</i>
<i>Ancient Greek & Roman Philosophy.....</i>	<i>22</i>
<i>Taoism</i>	<i>23</i>
<i>Christianity.....</i>	<i>23</i>
CONCLUSION: BE THE CHANGE	23
VIII. CAN WE CHANGE?.....	24
INTRODUCTION: CAN WE CHANGE?	24
MODERN SCIENCE: PERSPECTIVES ON CAN WE CHANGE?.....	25

<i>Virtue Development and Cultivation</i>	25
<i>Fixed vs. Growth Mindsets</i>	29
<i>The Architecture of Sustainable Change</i>	30
ANCIENT WISDOM: PERSPECTIVES ON <i>CAN WE CHANGE?</i>	32
<i>Ancient Greek & Roman Philosophy</i>	32
<i>Buddhism</i>	33
<i>Hinduism</i>	33
<i>Christianity</i>	34
CONCLUSION: CAN WE CHANGE?	34
IX. WHEN WE CHANGE	35
INTRODUCTION: WHEN WE CHANGE	35
<i>Our Behavior Spreads Within Our Communities</i>	36
<i>Our Behavior Spreads Within Our Homes</i>	39
<i>Our Behavior Spreads at Work</i>	41
<i>Our Behavior Spreads to Strangers</i>	45
<i>Our Behavior Spreads Over the Internet</i>	51
CONCLUSION: WHEN WE CHANGE.....	53
X. CONCLUSION	55
XI. LIMITATIONS AND FUTURE DIRECTIONS	56
LIMITATIONS	56
FUTURE DIRECTIONS	58
XII. REFERENCES	60
XIII. APPENDIX	69

“Yesterday I was clever, so I wanted to change the world. Today I am wise, so I am changing myself.”

- Rumi

IV. Preface

My parents prioritized two beautiful things when they were young adults: creating a big family and spending time with us kids. Those priorities benefited us kids in many ways, but they also carried a cost. As our family grew from two to eight, we barely skirted above the poverty line. This took an emotional toll on me as it prevented me from participating in things that the *other* kids got to do. So at the ripe old age of ten, I made a vow to someday become wealthy. I reasoned that if a lack of money led to my suffering, then an abundance of money would surely lead to my happiness.

I was determined; I worked as many jobs and as many hours as I could. I studied hard, excelled in university, and “made it” in New York, building a successful career on Wall Street. I was rewarded for my hard work and I started earning more than I could have ever dreamed. And yet, I was miserable. At age thirty-three, I was depressed; it was as if a dark cloud followed me to and from work each day. Somehow, I had achieved all the goals I had set for myself, but I hadn’t actually gotten what I wanted. I wanted love, belonging, fulfillment and joy.

Through this confusing time though, something profound happened. I developed a desire to become self-aware and to discover a *true* formula for happiness. I stepped into the most important journey of my life, a journey of growth and introspection. It began with self-help, continued with ancient wisdom and spirituality, and now finds me studying positive psychology at UPenn. Early in my journey I attended Tony Robbin’s *Unleash The Power Within* and the

Mankind Project's *New Warrior Training Adventure*. I was hooked! I immediately began telling everyone that they *must* attend and that it was *life changing*. Although my intentions were mostly pure, I met significant resistance. Apparently, my approach of *shouting from the rooftops* was falling on deaf ears. Even worse, the unsolicited advice I was giving created friction and fractures in relationships. I became frustrated, angry, but mostly just sad.

Soon thereafter, I came across Gandhi's teachings and wisdom. Although I had *heard* some of Gandhi's quotes before, I had never actually *listened* to them. The timing had never been right. When I listened to one of Gandhi's varied quotes advising us to *Be The Change*, something clicked. I realized that my life (and the world) might transform in beautiful ways if I were to focus more on changing myself, and less on *trying* to change others. That if I was truly committed to helping the world, a sensible strategy would be to develop, grow, and transform myself. But would changing *ME* really have an impact beyond me? Could a self-first strategy actually not be *selfish*? Most importantly, could I still do my part to help alleviate suffering and boost flourishing?

These questions – sparked by my own journey, are the *rationale* for this capstone. My aim is to review the ancient wisdom related to *Be the Change*. And to support that with scientific research which investigates the potential for individual virtuous behaviors to spread to the collective. The answers to these questions could have implications for much of society, especially the well-intentioned but sometimes hypocritical part in each us. Within the positive psychology movement, it may compel researchers, practitioners, academics, and coaches to spend more time on personal virtue and well-being cultivation, such that we fully embody the changes we wish to see in the world.

“We predict that positive psychology in this new century will allow psychologists to understand and build those factors that allow individuals, communities, and societies to flourish.”

- Seligman and Csikszentmihalyi, 2000

V. Overview of Positive Psychology

Seligman and Csikszentmihalyi (2000), along with a host of other researchers, introduced plans for a science of positive psychology in a special edition of *American Psychologist*. Positive psychology, as they envisioned it, would concern itself with helping individuals, communities, and societies to flourish. While psychology had traditionally focused on treating mental illness in clinical populations, positive psychology would prioritize nurturing positive qualities. Like psychology, positive psychology would rely heavily on the scientific method; measurement and statistics are foundational to both fields (Seligman & Csikszentmihalyi, 2000).

Well-Being Frameworks

An important feature of positive psychology is its abundance of validated well-being measures, which are quantifiable and stable over time. These measures allow researchers, practitioners, and policy makers to better understand current and historical well-being levels at individual, group or collective level. Seligman (2011) posited that well-being consists of: **P**ositive Emotions, **E**ngagement, Positive **R**elationships, **M**eaning, and **A**ccomplishment (PERMA). Seligman believed flourishing individuals live a life that is “pleasant, engaged, meaningful, achieving, and connected.” More recently, Heroic Public Benefit Corporation introduced the **H**eroic **B**ig **T**hree (HB3), a human flourishing scale that quantifies well-being across three important life areas: 1) Energy, 2) Work, and 3) Love. Heroic’s HB3 scale was recently introduced and correlates strongly with other validated measures of well-being (B.

Johnson, personal communication, July 25, 2022). There are countless other frameworks in the field, all trying to help humanity flourish. Positive psychology advances these goals by using scientific methods to test and validate the actions we can take to help people flourish.

Positive Interventions

Positive psychology birthed evidence-based positive psychology interventions (PPIs). Pawelski (2016) posits PPIs are activities specifically designed to boost individual or collective well-being, primarily for non-clinical populations. They are one of the most promising methods to increase human flourishing by increasing what's good in a person's life. Lyubomirsky et al. (2005) found that even in the face of genetic or circumstantial headwinds, PPIs can boost happiness levels. Could PPI's change more than our happiness levels? Could they change our very character? We will explore this potentiality further in Section VIII.

Character Strengths & Virtues

Chris Peterson and Martin Seligman (plus fifty-five additional scientists) conducted a multi-year research project which catalyzed research into character and virtue by creating a classification of strengths (Peterson & Seligman, 2004). The researchers believed character was foundational to the human condition, so they investigated influential cultures and religions (Buddhism, Christianity, Hinduism, Judaism, Taoism, Athenian Philosophy, etc.) and a variety of disciplines (philosophy, religion, education, politics, etc.) to identify universally admired virtues and sub-virtues (which were specified as character strengths). Research culminated with the publishing of the *Character strengths & virtues handbook* in 2004, which featured a classification system of human strengths. The effort was herculean and is considered to be the backbone of the positive psychology movement (Mayerson, 2020).

The research team identified twenty-four human strengths in total and grouped them into six virtue categories they deemed the “High Six”. The team, for example, linked the character strength bravery to the virtue category courage. In this paper, I often describe individuals as living with virtue or living virtuously. When I do, I am aiming to convey that they are utilizing one or more of their universally admired character strengths. I also at times refer to prosocial behaviors. In those cases I am aiming to distinguish the usage of character strengths that specifically serve other people (e.g. kindness, fairness, love).

Since the creation of the classification system, more than five hundred research studies on the twenty-four character strengths have been published (*The VIA Institute on Character*, n.d.), greatly enhancing our understanding of human goodness and potential. The research is wide-ranging and it confirms that character strengths can be cultivated and developed (Niemiec & McGrath, 2019) through the support of positive psychology interventions. Just imagine if each one of us chose to cultivate our virtues – what kind of world would emerge? Would the world flourish along with us? In section VIII, I review three-character strengths and their malleability in more detail: self-regulation, hope, and kindness. In section IX, I discuss the impact of personal virtue cultivation and expression on the collective good.

Moonshot Goal

The need for a *moonshot* goal for the positive psychology movement was initially considered in 2009 at an international positive psychology summit (Seligman, 2011). Shortly thereafter, Seligman proposed the following goal: to create a world in which 51% of humanity is flourishing by 2051. My intention for this capstone is to advance our progress towards that goal by bringing to our consciousness the wisdom from Gandhi’s life. To cull together the positive

psychology literature that I believe supports his wisdom, and to encourage researchers, educators, practitioners, and anyone else (starting with me, starting today) to *Be the Change*.

“Our greatness lies not so much in being able to remake the world outside us – as most of us are led to believe – as in being able to remake ourselves on the highest model of human achievement as we know of.”

- Mahatma Gandhi

VI. Introduction

We Want Change

The vast majority of humans yearn for a better world (86% globally), a world that is more equitable, a world that is more sustainable (Ipsos, 2020). Underlying that desire is a hope that humans themselves will be better. We want politicians to act with more integrity; social media CEOs to care more about our mental health; energy executives to care more for our planet; romantic partners to better understand our needs; children to spend less time online; drivers to drive more conscientiously. In short, we want people to live more virtuously. We want people to be more fair, more honest, more understanding, more patient, more generous, more friendly, more loving, more open, more hopeful, more fun, and more energized.

Our Current Approach

We want a better world, but how are we encouraging the change that we seek? We complain about politics but continue to elect unethical and dishonest politicians (or worse, we don't even vote). We bemoan how social media is harming society and yet we continue to use their services habitually while owning stock in these very same companies (either directly, or

through S&P500, Nasdaq, etc.). We are angered by companies that harm the environment while we drive gas guzzling SUVs and take long-haul flights (guilty as charged). We berate our children and threaten to take away their devices, only to immediately glance back down at our own. We “encourage” other drivers to drive better by taking our eyes off the road so we can yell expletives at them. We are hypocrites!

A New Approach

It is time for a different approach. It is time for humanity (myself included) to look itself in the mirror, to be honest about our own actions, our own behaviors, and to chart a new course. It is time to change ourselves, to live with more virtue, to evolve our internal states of being. To change the world, from the inside out. Gandhi taught that we need not wait for others to change (Easwaran, 2011), we can instead act now to *Be the Change* we wish to see in the world. Gandhi was convinced that if one person changes, the collective also changes. Although Gandhi’s wisdom might sound far-fetched, scientific research is emerging that supports this interconnected view of humanity.

Capstone Flow

This paper reviews Gandhi’s *Be the Change* wisdom through the lens of positive psychology. Section VII explores Gandhi’s life to provide context and nuance underlying his teachings. Section VIII highlights research investigating our ability to make lasting changes to our character and behaviors. Section IX culminates with a literature review of positive psychology topics including elevation, cooperation, altruism, and social contagion that explore (through scientific investigation) the impact we can have when we are able to *Be the Change*.

"If you want to change the world, start with yourself."

- Mahatma Gandhi

VII. Be the Change

Introduction: Be the Change

Gandhi popularized the *Be the Change* wisdom and perhaps embodied the ethos better than anyone since. Gandhi didn't write or say *Be the Change* in such an abbreviated form, but he did frequently share longer narratives which contained the same sentiment. I have adorned this paper with Gandhi quotes that paint a picture of a man who was obsessed with personal transformation, self-mastery, and living his teachings. Gandhi spent much of his life leading colossal geo-political movements, but I believe his wisdom is applicable to each of us. We can all *Be the Change* in our own lives, in our own big or small ways.

Be the Change could be interpreted in different ways by different people. My review of various literature from Gandhi (M. Gandhi, 1927; M. K. Gandhi, 1951) and from others (Easwaran, 2011; Hardiman, 2003) suggests Gandhi's *Be the Change* wisdom encompassed the following teachings:

- our greatness lies in our ability to develop and achieve self-mastery
- we must practice what we preach
- we need not wait for others to change, we can initiate change within ourselves now
- we must change ourselves *before* we try to change others
- the world will mirror any changes we make as individuals

I knew that Gandhi's wisdom, however profound, needed be narrowed to be useful for a positive psychology capstone. To make for a good hypothesis, it needs to be specific enough to

be falsifiable. My specific hypothesis for my capstone: *If an individual cultivates and expresses more virtue (e.g. character strengths), their virtuous behaviors will spread to family, friends, co-workers and even complete strangers, magnifying the virtuosity in the world.* Later, in section IX, I review a collection of research which investigates the spread of virtuous behaviors through the lens of this more tangible and falsifiable hypothesis.

In this section (Section VII), I review some of Gandhi's significant achievements and spotlight some of the extraordinary personal sacrifices he endured in order to consistently practice his *Be the Change* philosophy. I explore how Gandhi was able to generate incredible power and influence and then summarize ancient wisdom that corroborates his teachings.

“My life is my message”

- Mahatma Gandhi

The Life of Mahatma Gandhi

Gandhi lived a remarkable life; so much so that the Indian people anointed him *Mahatma*, which translates to “Great Soul.” Gandhi is revered in India for leading the liberation movement that freed India from British rule. The movement took decades and consisted of many significant non-violent campaigns that advanced the rights of the Indian people (M. Gandhi, 1927; M. K. Gandhi, 1951). Gandhi was known to live have lived with the upmost integrity, such that his thoughts, feelings, words and actions were all in sync (Easwaran, 2011). Perhaps no story better captures Gandhi's commitment to the *Be the Change* ethos than this one:

During the thirties a woman came to Sevagram (Gandhi's ashram) asking Gandhi to get her little boy to stop eating sugar; it was doing him harm. Gandhi gave a cryptic reply:

“Please come back next week.” The woman left puzzled but returned a week later, dutifully following the Mahatma’s instructions. “Please don’t eat sugar,” Gandhi told the young fellow when he saw him. “It is not good for you.” Then he joked with the boy for a while, gave him a hug, and sent him on his way. But the mother, unable to contain her curiosity, lingered behind to ask, “Bapu, why didn’t you say this last week when we came? Why did you make us come back again?” Gandhi smiled. “Last week,” he said to her, “I too was eating sugar”. (Easwaran, 2011, p. 203)

Gandhi Lived the ‘Be the Change’ Ethos

Gandhi yearned for a better world, a world with justice and where people were free to self-govern (M. Gandhi, 1927). He dreamt of a world free of oppression, where people would live with virtue and integrity. Gandhi asked his followers to make huge personal sacrifices, but not before he himself made those same sacrifices (M. K. Gandhi, 1951). Gandhi tried to live as an anti-hypocrite, living in alignment with his teachings and the spiritual dharma that he followed (Easwaran, 2011). He believed if he fell out of integrity with his highest ideals, his followers would do the same, thereby stalling any progress they had collectively made (M. K. Gandhi, 1951).

Gandhi wasn’t born especially virtuous or mighty, he was relatively unspectacular in many ways (Easwaran, 2011). Gandhi was short (5’4”) and thin, a mediocre student, an ineffective lawyer, and had little direction in his life until he was kicked off the train in South Africa for refusing to move to a lower class cabin (Indians in South Africa lacked basic legal rights during apartheid) (Easwaran, 2011). Yet, he was later able to transform himself into someone worthy of the “Mahatma” title, by cultivating the virtue in the following ways:

Gandhi Cultivated Extraordinary Courage. Gandhi asked his followers to willingly subjugate themselves to jail time in order to non-violently protest against the injustices they faced as second class citizens in India and South Africa (Easwaran, 2011). As a result, sixty thousand of his followers were arrested during the 1930 Salt March alone (Doyle, 2018). Importantly, Gandhi led by example, walking step-by-step with everyone else during the non-violent protests. Gandhi risked jail-time repeatedly and ended up in jail eleven times, serving combined sentences of more than six years (Easwaran, 2011). Gandhi knew it would be unfair and immoral to ask of his followers to do something that he himself would not be willing to endure. If Gandhi wanted his followers to live with heroic courage, he knew he would first need to embody heroic courage himself.

Gandhi Embodied Peace and Non-Violence. Gandhi asked his followers to endure grave hardships across the decades-long fight for independence, including physical assaults by police (M. K. Gandhi, 1951). Gandhi asked his followers to practice unwavering non-violence, even in the face of physical aggression. Gandhi himself led these marches and protests, and reportedly never fought back even when he was attacked (Easwaran, 2011). Gandhi was beaten severely in 1908 by his fellow Indians in South Africa when he led a movement that they felt was too friendly to the British opposition. He was attacked by a mob of six thousand white Europeans when he arrived to South Africa in 1897, and yet, refused to prosecute the offenders (Easwaran, 2011). Attacks against Gandhi and his followers typically backfired though as onlookers near and far felt compassion for the victims. Since Gandhi practiced unwavering peace and non-violence, even in the face of physical violence, compassionate people from all over the world began to rally behind him. Patanjali, the ancient yogic teachers spoke to the power of

peace, “*In the presence of a man in whom all hostility has died, because he does not challenge anyone, others cannot be hostile*” (Easwaran, 2011, p. 137).

Gandhi Practiced Fairness and Equality. While Gandhi was campaigning for India’s independence, he identified hypocrisy within his own movement (Easwaran, 2011). India wanted to be free, to self-govern, and to be granted the basic human rights they knew they deserved. But within India, and among Gandhi’s own followers, there was overt discrimination being levied against the *Untouchables* (the lowest caste in India). Gandhi instructed his followers that they must first treat their own people fairly and without prejudice before they themselves would be deserving of independence. Gandhi took several steps to move the initiative forward. He renamed the lower caste *Harijans* or *Children of God*. He began to encourage inter-caste marriages, he and his wife adopted and cared for a Harijan girl, and he welcomed Harijans into his ashrams. Gandhi asked the Indian populous to embody the same fairness and kindness that they were hoping the British would exude (Easwaran, 2011).

Gandhi Radiated Love and Compassion. Gandhi aspired to create a world where all beings can live with freedom, love, and happiness (Easwaran, 2011). Gandhi believed that a successful non-violence movement required you to love your opposition, even those who claim to hate you. During his meditations he cultivated love for his enemies, believing that doing so would open his heart wider. Gandhi recited the mantra *Rama* throughout his adult life, and when he was assassinated (shot in the chest three times), the last words he uttered were *Rama, Rama, Rama* which meant, “I forgive you, I love you, I bless you” (Easwaran, 2011, p. 166). Gandhi wanted to be treated compassionately by the British, but first he would need to ensure that he and his followers did the same.

“He (Gandhi) was the greatest man of our age generations to come, it may well be, will scarce believe that such a man as this one ever in flesh and blood walked upon this Earth”

- Albert Einstein

Gandhi’s Lasting Influence

Gandhi’s achievements have been recognized far and wide. *Time Magazine* named Gandhi *Man of the Year* in 1930 and ranked him as runner-up to Albert Einstein for *Person of the Century* (Golden, 1999). He was nominated for the *Nobel Peace Prize* on five different occasions between 1937 and 1948 (Tønnesson, 1999). Later, the Indian government launched its own international peace prize, naming it the *International Gandhi Peace Prize* (*Ministry of Culture, n.d.*). Gandhi’s life inspired numerous other social justice and civil rights movements, including those led by other Nobel Peace Prize winners. Martin Luther King Jr. credited Gandhi and his philosophy of non-violent resistance as “the only morally and practically sound method open to oppressed people in their struggle for freedom” (Chakrabarty, 2013, p. 62). Nelson Mandela (Mandela, 2013) wrote that Gandhian philosophy helped South Africa overcome apartheid. Meanwhile, Burmese freedom fighter Aung San Suu Kyi (Hardiman, 2003) points to Gandhi as one of the biggest influences in her life.

Gandhi’s Superpower: Soul Force

Gandhi lived a remarkable life. How did he do it? How did he manage to liberate India from the oppressive rule of the world’s strongest military power? How was he able to inspire hundreds of millions of people to follow his movement? Why was he so willing to risk physical harm and prison time in order to keep in alignment with his highest ideals?

Gandhi believed *Satyagraha* was the catalyst for him and his followers' successes. *Satyagraha* is a Sanskrit word that Gandhi conceived. *Satyagraha*, which translates to *Soul Force* in English, is the innate power within each of us that gets activated when we apply the full force of our unique strengths towards something greater than ourselves.

Gandhi once described the phenomenon as follows: "there becomes a time when an individual becomes irresistible and his (or her) action becomes all-pervasive in its effect" (Easwaran, 2011, p. 136). Gandhi reached that irresistible state when he let go of fear, selfishness, and separateness. He reduced his attachments to zero (no more striving, no more egoic greed, no more selfish desires), completely living for others and for the world at large. As soon as Gandhi made it his top priority to serve something higher than himself, he found that he had an abundance of "almost unharnessable power" (Easwaran, 2011, p. 126). Gandhi followed this wisdom from the Bhagavad Gita, an ancient Hindu text that remains influential today: "Let your concern be with action alone, and never with the fruits of action. Do not let the results of action be your motive" (Easwaran, 2007a, p. 133). Doing so freed him from the worry and exhaustion that often accompanies outcome-focused mindsets (Easwaran, 2011).

Gandhi's Wisdom Is Echoed Within Wisdom Traditions

Although people credit Gandhi with innovating new strategies to transform societies (there's even a term 'Gandhism' to encapsulate Gandhi's body of ideas), Gandhi disagreed. He argued that his teachings were merely distillations from ancient wisdom traditions:

I have nothing new to teach the world. Truth and nonviolence are as old as the hills. All I have done is to try experiments in both on as vast a scale as I could do. In doing so, I have sometimes erred and learnt by my errors. Life and its problems have thus become to

me so many experiments in the practice of truth and nonviolence. (Easwaran, 2011, p. 168)

"You should perform your duties to set an example for the good of the world. Whatever actions great persons perform, common people follow. Whatever standards they set, all the world pursues."

- Krishna, the Bhagavad Gita

Ancient Wisdom: Perspectives on *Be the Change*

Gandhi's recommendation that people ought to *Be the Change* is rooted in ancient wisdom. This ideal has been understood and embraced by major religions and philosophical thinkers throughout time; it might even be one of the most universally accepted tenets.

Hinduism

Gandhi considered the Bhagavad Gita, an ancient Hindu text, to be a sacred gift, something he turned to whenever times were tough. The Bhagavad Gita teaches that we must live its teachings in order to fully understand them (Easwaran, 2007a), intellectual understanding is not enough. Krishna, one of Hinduism's widely revered divinities, shares that he engages in continuous work even though he has nothing to gain (for he is already enlightened); he does so for the purpose of setting an example for others to follow (Easwaran, 2007a). The Bhagavad Gita tells us that exemplary people, doing great things, inspire others to follow (Easwaran, 2007a).

Buddhism

Buddhism aligns with the Bhagavad Gita. Buddha, the founder of Buddhism and a spiritual leader from over two thousand five hundred years ago, told us: "Like a lovely flower

full of color and fragrance, are the words of those who practice what they preach. (Easwaran, 2007b, p. 118). Buddha also said people who achieve self-mastery are greater than those who “conquer a thousand times a thousand men on the battlefield” (Easwaran, 2007b, p. 111). The Buddha himself walked the eight-fold path (one of the principle teachings of Buddhism) *before* he offered it to the world as a blueprint to follow to transcend suffering (Easwaran, 2007b). Shantideva (2006), an eighth century Buddhist monk philosopher, said it would be better to affix leather to the bottom of your own shoes than to try to cover the entire earth in leather, suggesting it is more sensible to transform oneself than to try to change those outside of us. He also wrote, “but all this must be acted out in truth, for what is to be gained by mouthing syllables?” (Shantideva, 2006, p. 114). Meanwhile, the Dalai Lama said that we should first focus on our own internal disarmament before we turn our attention to external disarmament (*Inner and Outer Disarmament*, n.d.).

Ancient Greek & Roman Philosophy

Stoic philosophers told us to *practice our philosophy*. Epictetus, one of the great Greek stoic philosophers, challenged his students, saying “If you didn’t learn these things in order to demonstrate them in practice, what did you learn them for?” (Epictetus, 2008, p. 97). He urged his students to, “Step forward and make use of what you’ve learned. It isn’t more logic chopping that is needed what we need now are people to apply their learnings and bear witness to their learning in their actions” (Epictetus, 2008, p. 99). Aristotle, another legendary Greek philosopher, noted that we study ethics to *become* virtuous, not just to know what virtue is (Melchert, 2002). He believed moral virtues (defined as acts of excellence related to the social aspects of life) are like crafts; to master them requires practice and habituation, adding that we

become just, temperate, and brave by doing things that are just, temperate, and brave (Melchert, 2002, p. 192). Aristotle believed personal transformation was a necessary part of the good life.

Taoism

The founder of Taoism (Lao Tsu), an ancient Chinese philosophy that focused on living in harmony, said, “Knowing others is intelligence; knowing yourself is true wisdom. Mastering others is strength; mastering yourself is true power” (Mitchell, 1992, p. 39).

Christianity

The Bible advises us to live with integrity. Matthew, one of Jesus’ twelve apostles, wrote that we should let our light shine for others so they can witness our good progress (*King James Bible*, 1611/2016, Matthew 5:6) and had harsh words for those who “preach but do not practice” (*King James Bible*, 1611/2016, Matthew 23:3). In the book of Romans, Paul, an influential leader during the early years of the Christian church, called out hypocrites who teach others but do not practice themselves, suggesting people who do so might be the same people who complain about stealing while also being thieves themselves (*King James Bible*, 1611/2016, Romans 21:1).

Conclusion: Be the Change

Throughout history and into modern times, the wisdom of one of Gandhi’s most prominent teachings, *Be the Change*, has been revered. Gandhi was a living exemplar of *Be the Change*, willingly enduring great personal sacrifice to ensure that he lived with integrity and in alignment with how he wanted others to live. In the next section (Section VIII), I explore the positive psychology literature that aims to shed light on our ability (or inability) to make sustainable changes to our character, behavior, and emotional states.

“The struggle is great, the task divine—to gain mastery, freedom, happiness, and tranquility.”

- Epictetus

VIII. Can We Change?

Introduction: Can We Change?

Gandhi’s *Be the Change* ethos consists of an assumption: individuals *can* change. It also implies an assertion: when individuals change, the world also changes. Section VIII explores *Can We Change*, while Section IX reviews positive outcomes that occur *When We Change*. My own personal growth journey suggests cultivating virtue and lasting behavior change is possible, but not easy. Looking beyond myself, I’ve witnessed significant lasting changes among many of my closest friends. While I am confident lasting change is possible (anecdotally speaking), I address the *Can We Change?* question in my capstone for a few reasons:

- I want to understand the research so I can better support people who are skeptical about their ability to change their behaviors.
- Research suggests a fixed mindset is widespread in the general public, with 40% of adults, students, and children falling under that categorization (Elliot et al., 2018). One might expect that fixed mindsets also pertain to an individual’s ability to cultivate and develop character strengths and virtuous behaviors too.
- There is debate in the positive psychology literature as to whether or not we can sustainably change. Some evidence suggests changes tend to be small and not sustained (Sheldon & Lyubomirsky, 2021).

Modern Science: Perspectives on Can We Change?

The field of positive psychology was founded on the hope that “a science of positive subjective experience, positive individual traits, and positive institutions” could help individuals, communities, and societies flourish (Seligman & Csikszentmihalyi, 2000, p. 1). Inherent in that prediction is the belief that individuals, communities and societies *can* change. In *Authentic Happiness*, Seligman (2002) concluded that people can indeed become sustainably happier.

Before this field of study was founded, little research had been done to support interventions designed to boost well-being or human flourishing (Parks & Schueller, 2014). Since 2000, however, positive psychology has helped catalyze dozens of scientifically validated positive psychology interventions (PPIs); many of which are featured in the *Wiley Blackwell handbook of positive psychological interventions* (2014). A quick search on Google Scholar for “positive psychology interventions” returns more than nine thousand results, confirming substantial progress. Scientific research has advanced our understanding of interventions which aim to bring more of what’s positive into our lives and have reinforced the notion that through deliberate action, we *can* change.

Virtue Development and Cultivation

One focus of human change in positive psychology is character development. The VIA Institute was established in 2000 to specifically promote the development of human character (Parks & Schueller, 2014). Since the VIA Institute was founded, more than five hundred research papers have been published to support this initiative. Scientific research on sustained character development is emerging; thus far most research regarding long-term virtue cultivation is siloed to a specific strength or virtue, such as self-regulation, hope, or kindness.

Peterson and Seligman (2004) identified twenty-four universally admired character strengths, and provide detailed definitions and characterizations of each. The uniformity and specificity within the classification system limits ambiguity and ensure rigorous research can be conducted and compared. In table one, I highlight the twenty-four character strengths as they are currently defined on the VIA Institute website.

Table 1

Complete List of VIA Character Strengths With Short Descriptions

The 24-VIA Character Strengths		
#	Character Strength	VIA Short Description
1	Appreciation of Beauty & Excellence	"I recognize, emotionally experience, and appreciate the beauty around me and the skill of others."
2	Bravery	"I act on my convictions, and I face threats, challenges, difficulties, and pains, despite my doubts and fears."
3	Creativity	"I am creative, conceptualizing something useful, coming up with ideas that result in something worthwhile."
4	Curiosity	"I seek out situations where I gain new experiences without getting in my own or other people's way."
5	Fairness	"I treat everyone equally and fairly, and give everyone the same chance applying the same rules to everyone."
6	Forgiveness	"I forgive others when they upset me and/or when they behave badly towards me, and I use that information in my future relations with them."
7	Gratitude	"I am grateful for many things and I express that thankfulness to others."
8	Honesty	"I am honest to myself and to others, I try to present myself and my reactions accurately to each person, and I take responsibility for my actions."
9	Hope	"I am realistic and also full of optimism about the future, believing in my actions and feeling confident things will turn out well."
10	Humility	"I see my strengths and talents but I am humble, not seeking to be the center of attention or to receive recognition."
11	Humor	"I approach life playfully, making others laugh, and finding humor in difficult and stressful times."
12	Judgement	"I weigh all aspects objectively in making decisions, including arguments that are in conflict with my convictions."
13	Kindness	"I am helpful and empathic and regularly do nice favors for others without expecting anything in return."
14	Leadership	"I take charge and guide groups to meaningful goals, and ensure good relations among group members."
15	Love	"I experience close, loving relationships that are characterized by giving and receiving love, warmth, and caring."
16	Love of Learning	"I am motivated to acquire new levels of knowledge, or deepen my existing knowledge or skills in a significant way."
17	Perserverance	"I persist toward my goals despite obstacles, discouragements, or disappointments."
18	Perspective	"I give advice to others by considering different (and relevant) perspectives and using my own experiences and knowledge to clarify the big picture."
19	Prudence	"I act carefully and cautiously, looking to avoid unnecessary risks and planning with the future in mind."
20	Self-Regulation	"I manage my feelings and actions and am disciplined and self-controlled."
21	Social Intelligence	"I am aware of and understand my feelings and thoughts, as well as the feelings of those around me."
22	Spirituality	"I feel spiritual and believe in a sense of purpose or meaning in my life; and I see my place in the grand scheme of the universe and find meaning in everyday life."
23	Teamwork	"I am a helpful and contributing group and team member, and feel responsible for helping the team reach its goals."
24	Zest	"I feel vital and full of energy, I approach life feeling activated and enthusiastic."

Note: Adapted from The 24 Character Strengths, by the VIA Institute, n.d.

(<https://www.viacharacter.org/character-strengths>). In the public domain.

Recent factor analysis undertaken by McGrath et al. (2018) identified three over-arching virtue categories of which the twenty-four strengths belong: self-control, inquisitiveness, and caring. Below I highlight research that explores the notion that we can *Be the Change*, for three character strengths: self-regulation, hope and kindness.

Self-regulation is a strength of character (virtue category: self-control) that offers humans a degree of control over their thoughts, feelings, and behaviors (Baumeister et al., 2006). Those who lack sufficient self-regulation are more likely to spend frivolously, cheat on diets, abuse alcohol, and perform inappropriate sexual activities. Developing self-regulation requires the prefrontal cortex (decision making and moderating part of the brain) to regulate the amygdala (survival part of the brain). The researchers cite longitudinal studies that suggests self-regulation can be cultivated and strengthened, and that development in one self-regulating area uplifts abilities in other self-regulating areas. Research studies have been conducted finding strength development across behaviors, such as adherence to exercise programs, ability to concentrate while blocking out tempting distractions, ability to restrain financial purchases, and improved studying habits in academic settings (Baumeister et al., 2006).

Hope represents another strength of character (virtue category: inquisitiveness) with important consequences. Magyar-Moe and Lopez (2015) theorize hope relates to our beliefs about our abilities to set clear goals, to identify effective pathways to achieve those goals, and to access the required motivation to pursue those goals. Hope researchers have created manualized interventions intended to elevate hope levels in individuals (children, adolescents, and adults) in both therapeutic and academic settings (Magyar-Moe & Lopez, 2015). Researchers conducted a meta-analysis of twenty-seven hope studies in clinical and community settings and found hope interventions had a small (but statistically significant) impact on increased hopefulness and life

satisfaction (Weis & Speridakos, 2011). The researchers concluded that since hope interventions only enhanced hopefulness modestly, interventions aimed at increasing other strengths of character, such as gratitude, optimism, mindfulness might be better suited for enhancing psychological outcomes. The payoff of successful interventions could be significant though: individuals with higher hope have better health, superior cognitive function, and better performance in academic and athletic settings. Hope development is a promising area of research within positive psychology, but it's still early and many questions still need to be rigorously tested (Magyar-Moe & Lopez, 2015).

Kindness is another universally admired strength of character that is studied in positive psychology (virtue category: caring). Kindness research is emerging and findings suggest kindness is not only good for our wellbeing but that it can be cultivated. Performing kind acts has been shown to be beneficial for both the beneficiary and the benefactor (Lyubomirsky, 2007). Mayr and Freund (2020) found people tend to become more kind (as measured by charitable giving, volunteering) as they grow older, mediated by an increase in their care for the common good. This research suggests kindness behavior does develop, at least over time and as we age. Flook et al. (2015) conducted a randomized control trial that introduced a kindness curriculum to preschool children, and found the curriculum boosted kindness outcomes. Luberto et al. (2018) conducted a broad meta-analysis of meditation interventions (most of the studies they reviewed included compassion or loving kindness meditations) and found meditation interventions led to significantly greater prosocial behaviors in 85% of the studies analyzed. Kindness interventions are evolving and more longitudinal studies are needed but early research indicates kindness is a malleable strength of character.

Fixed vs. Growth Mindsets

Whether we believe we can change or not can be linked to either a growth or fixed mindset. People who have fixed mindsets believe their talents, intelligence, and abilities are fixed and trait-like (e.g. unchangeable) features of who they are. Individuals with growth mindsets believe they can change, improve, and evolve. Carol Dweck conducted studies on mindsets and ascertained 40% of people have growth mindsets, 40% have fixed mindsets, and the remaining 20% fall somewhere in-between (Dweck, 2006; Elliot et al., 2018). Although most people are ineffectual at estimating their own abilities, a majority of prediction error is made by individuals with fixed mindsets (Dweck, 2006). Growth-minded individuals tend to be quite accurate at predicting their own abilities.

Growth-minded individuals tend to live substantially different lives, simply because they *believe* they can change. As a result of that belief, they are more willing to put in effort and to persevere when confronting challenges during their pursuits (fixed mindset individuals prefer not to waste their time since they believe their efforts will be futile). Even when things are bleak, growth-minded individuals can thrive; their additional effort translates into better outcomes. Growth-minded individuals also tend to enjoy the process while it's happening, whereas fixed-minded individuals tend to be fixated on the outcome.

Fortunately, it's possible for people to evolve their mindset from fixed to growth (Dweck, 2006). An emerging area of research supports the use of mindset interventions aimed to shift mindsets towards a growth orientation. Yeager et al. (2019) found that a brief online mindset intervention boosted grades for lesser achieving students while also increasing enrollment in more advanced math classes. In later research, Yeager et al. (2021) concluded that higher math grades from a mindset intervention were limited to students in classrooms with growth-minded

teachers, suggesting environmental and classroom dynamics may also be important mediators for student growth mindset improvements.

Dweck believes character grows out of mindset, and thus, character can also be learned. Importantly, Dweck (2006) concludes individuals *can* change their abilities, talents, and even intelligence if they put forward clear focus, dedicated effort, and exhibit a willingness to persevere, even if it requires trying variety of strategies.

The Architecture of Sustainable Change

While there is evidence that people can change their character and their mindset, there has been lively debate as to the extent to which individual flourishing levels are malleable. Lyubomirsky et al. (2005) published *The Architecture of Sustainable Change*, a well cited piece of research (over four thousand eight hundred citations at time of this writing) which theorized that individual trait-like happiness levels are determined by three things: volitional activities, genetic set-points, and life circumstances. This claim, in and of itself, wouldn't spark much controversy, but the researchers also estimated each factor's contribution to well-being, offering a pie-chart with the following slices: 40% volitional activities (changeable), 50% genetic set-point (unchangeable), 10% life circumstances (largely unchangeable). Their research supported the idea that, through volitional undertakings, we can change 40% of our individual happiness levels.

Brown and Rohrer (2020) published a critical review of Lyubomirsky et al.'s (2005) piece whereby they concluded that an individual's genetic disposition may determine as much as 80% (Lykken & Tellegen, 1996) of our trait-like happiness levels, while life circumstances may account for as much as 15% (Brown & Rohrer, 2020). If so, that means individuals only have

control over 5% of their happiness levels, a depressingly low number that would offer little incentive for individuals to take deliberate action towards effecting change.

Sheldon and Lyubomirsky (2021) wrote a follow-up piece on the sustainability of change, aimed at addressing the criticism head on. The researchers agreed with most of the criticism (including the view that the 40% changeability figure was likely an over-estimate), but they provided context and research to underscore their belief that sustainable change is possible. White et al. (2019) published an authoritative meta-analysis reviewing the impact of positive psychology interventions (PPIs) and concluded that effect sizes on well-being are quite small ($r = 0.10$). The meta-analysis suggests positive psychology and its dozens of scientifically validated PPIs might not be causing sizeable changes in flourishing levels, which questions the sustained impact of PPIs. For, in the end, positive psychology was founded on the belief that it could help contribute to positive individuals, communities, and societies (Seligman & Csikszentmihalyi, 2000).

I remain optimistic. Although I think the critiques are interesting, I find them to be narrow and inconclusive. I find the research unconvincing for a few reasons:

- participants in well-being studies may lack sufficient motivation and effort to participate with the vigor required to drive lasting change;
- participants who are assigned to experimental groups randomly might lack the will power or commitment to their assigned intervention, psychological factors that appear important when constructing a happier life (Sheldon & Lyubomirsky, 2019);
- single-shot or even multi-week interventions may lack the duration or continuity needed impart lasting changes or habit formation for participants;
- researchers tended to focus on well-being changes across populations (on average), as

opposed to highlighting exemplars who show what *can* be achieved, and;

- larger effect sizes might materialize if researchers were to track individuals who are on multi-year, deeply committed, personal growth journeys.

Ancient wisdom has a clearer view as to the potential of humans to create sustained and meaningful change. In fact, for many wisdom traditions, changing or evolving in service of something bigger than ourselves is the entire purpose of existence. In the next section, I highlight ancient wisdom related to the question *Can We Change*.

Ancient Wisdom: Perspectives on *Can We Change*?

Ancient Greek & Roman Philosophy

Aristotle shared his views regarding our individual capacity to develop and cultivate human virtues. He believed the purpose of life was to achieve eudaimonia (e.g. soul flourishing) and to do this we must identify our “soul activity”, and pursue it with excellence (Melchert, 2002). Aristotle believed, *Areté* – which roughly translates to living virtuously, moment to moment, in order to actualize our highest potential – is the path to eudaimonia (Melchert, 2002). He also conveyed that virtue development required practice and habit formation and warned that “it is a hard job to be good” (Melchert, 2002, p. 194). Nevertheless, Aristotle communicated clearly his view that we can change, that we can cultivate virtue effectively, even though doing so requires discipline, effort, and patience (Melchert, 2002).

Epictetus, echoed much of Aristotle’s wisdom, and encouraged us to put into practice the wisdom we have acquired (Epictetus, 2008). He emphasized the importance of focusing on that which is in our control, such as our moral purpose, and taught that we have absolute control over both our liberation and our destruction. Similar to Aristotle, Epictetus counseled that patience is important on a journey of self-transformation because nothing important manifests in a single

night. Seneca said that good character is the only path that assures sustained, carefree happiness (Seneca & Campbell, 1969).

Buddhism

The Buddha created the Eightfold Path to provide a path that humans can follow to escape the cyclical existence of suffering (Easwaran, 2007b). This is arguably the biggest gift that Buddha gave to the world, a specific path to transcend suffering to reach enlightenment (e.g. self-actualize). He shared the steps that he took on his journey toward enlightenment: right view, right resolve, right speech, right conduct, right livelihood, right effort, right mindfulness, and right concentration. The eight steps are part of three overarching paths: insight (wisdom), moral virtue and meditation. Buddha clearly believed it was possible to *Be the Change*, even at the highest levels. The Buddha purportedly kept meditating even after he reached enlightenment, speaking to the fact that spiritual pursuits and virtue cultivation require consistent and deliberate practice. The Buddha said “The wise are disciplined in body, speech, and mind.” (Easwaran, 2007b, p. 190). Shantideva highlighted the need for consistency and discipline on a spiritual path, cautioning that we would otherwise lose our enthusiasm and weaken our grasp of any realizations (Shantideva, 2006).

Hinduism

The Bhagavad Gita contains spiritual wisdom related to our ability as humans to change ourselves during (Easwaran, 2007a). The primary teaching in the Bhagavad Gita is to renounce all attachments; when done, suffering will cease and joy will be all consuming. Krishna instructed that humans can achieve perfection if they are devoted to their duty. He also advised that we should live virtuously and in accordance with our own unique dharma (essentially, our soul’s calling). The teachings of Hinduism explicitly call for humans to evolve and change. Even

so, Krishna warns that enlightenment (the highest degree of flourishing) is a lofty achievement, that very few will pursue it with the necessary vigor. He shared that only one in thousands will seek perfection, and of these, very few will succeed to reach enlightenment. Nevertheless, self-mastery has its rewards according to Hinduism. Those who conquer themselves must do so with will-power but once accomplished, they will live in peace (Easwaran, 2007a).

Christianity

Lastly, the Bible, which is the foundational text for five Christian faiths (Baptist, Episcopalian, Presbyterian, Latter-day Saints and Pentecostal), features the ten commandments, which serve as a virtuous roadmap for Christians to follow, suggesting that change is possible and is also expected. Whether we change or not, and in which ways we change, will determine our place in the afterlife, according to this core Christian text (*King James Bible*, 1611/2016). Jesus teaches that achieving self-mastery is a greater victory than overtaking a city (Easwaran, 2007a).

Conclusion: Can We Change?

Positive psychology was founded to help promote individual, group, and societal flourishing; in other words, to help catalyze change for the greater good. Research confirms that positive psychology interventions are efficacious, but studies also suggest that the typical quantum of change is modest (White et al., 2019). Ancient wisdom traditions, meanwhile, affirm the importance of change and often identify it as a primary objective of the human condition. These traditions often provide playbooks (e.g. noble eight-fold path, ten commandments, etc.) for individuals to follow so that they can successfully change and so they can live lives filled with virtue.

Both ancient wisdom and modern science suggest change is possible, but they also make clear that change is not easy, and that it requires significant commitment. My take is that sustained life improvements, whether it be virtue cultivation or enhanced emotional states, require intense commitment and heroic patience. For we evolved to survive and reproduce – not to be happy – so we must overcome some of our most primal instincts in order to live with virtue.

“Therefore I believe that if one man gains spiritually, the whole world gains with him and, if one man falls, the whole world falls to that extent.”

- Mahatma Gandhi

IX. When We Change

Introduction: When We Change

When we change, and live a more virtuous life, there are two exciting consequences. Firstly, the person who undertakes the transformation flourishes. Research has established that putting our virtues into action (e.g. character strengths) leads to positive outcomes for individuals, including a boost to our flourishing levels across all five dimensions of PERMA (Wagner et al., 2020). Niemiec and McGrath (2019), prominent researchers at the VIA Institute, articulate that “when we express these character strengths through our thoughts and actions, research says we tend to feel happier, more connected, and more productive” (p. 29). Mayerson (2020) posits character strength (e.g. virtue) expression is both externally and internally

rewarding; it feels great to use them, and since they are universally valued within society, others also respond well.

Secondly, the people connected to the individual (either directly or indirectly) who undertakes the transformation, also benefit. This benefit is less well understood. What happens to the world around us if our behaviors become more virtuous? What happens when we quit smoking? What happens when we start volunteering at a homeless shelter? What happens when we donate more to charities? What are the impacts to the collective good when we as individuals act virtuously? In this section (Section IX), I highlight scientific literature that suggests Gandhi's assertion was sagacious; virtuous behaviors from the individual to the collective. The research I review includes behavior contagion across a variety of contexts, and is organized as follows:

- Our Behavior Spreads Within Our Communities
- Our Behavior Spreads Within Our Homes
- Our Behavior Spreads at Work
- Our Behavior Spreads to Strangers
- Our Behavior Spreads Over the Internet

Our Behavior Spreads Within Our Communities

This section explores behavioral contagion at the community level for three behaviors: alcohol consumption (drinking), cigarette usage (smoking), and health decisions (obesity). Christakis and Fowler published a wave of pioneering studies from 2007 to 2009 which indicated the existence of behavioral contagion within real-world social networks (Christakis & Fowler, 2009). The duo leveraged epidemiological data from the Framingham Heart Study that commenced in 1948. The Framingham dataset was unique in its breadth (12,067 participants), depth (health data including medical records, well-being self-report scales), and duration

(longitudinal data spanning decades). Christakis and Fowler (2009) also uncovered relational information which linked individual participants to others in their community. Perhaps the most salient insight harvested from the data was the finding that behaviors spread from individuals to their social contacts, up to three degrees away. This finding resulted in the *three degrees of influence* rule which asserts that behaviors spread across networks to our friends, our friends' friends, and our friends' friends' friends (Christakis & Fowler, 2009).

Let's delve deeper into the findings of behavior contagion for drinking, smoking, and obesity. Then, we will explore how behavior spreads to those we live with, those we work with, and those we've never even met before.

Drinking Behavior. Up to 18% of American adults will suffer from an alcohol abuse disorder at some point in their lifetime (Hasin et al., 2007). Rosenquist et al. (2010) studied alcohol consumption behaviors in the Framingham community and found a high correlation between an individual's consumption behavior and that of his or her real-world social network. The researchers identified clusters of alcohol consumption behaviors, such that heavy alcohol consumption by an individual can have an influence on their friends' friends' friends' alcohol consumption, increasing their likelihood of heavy drinking by 50% (first degree friends), 36% (second degree friends), and 15% (third degree friends). Alternatively, if an individual quits drinking, it would increase the likelihood of alcohol abstinence of 29% (first degree friends), 21% (second degree friends), and 5% (third degree friends). This study suggests our drinking behaviors spread to others, and could probabilistically influence the drinking behavior of dozens (or even hundreds or thousands) of people in our communities. If we desire to live in a world with less alcohol abuse, we could create that world by moderating our own alcohol consumption.

Smoking Behavior. Center for Disease Control and Prevention (n.d.a.) data suggest more than 30 million adults smoke cigarettes in the United States, and smoking remains the leading cause of preventable death. Adults who battle anxiety or depression are twice as likely to smoke cigarettes (Center for Disease Control and Prevention, n.d.a). Christakis and Fowler (2008) studied smoking behavior in the Framingham community, and found clusters of smokers and non-smokers that reached up to three degrees (to our friends', friends', friend). Over time, smokers moved towards the edges of the network, with fewer network ties (e.g. friends). Quitting smoking was associated with a 36% and 34% reduction in the likelihood that a friend or co-worker would smoke, respectively, suggesting smoking behaviors was contagious across contacts. This study revealed that smoking was often a social decision and found that entire groups of individuals chose to quit smoking together (Christakis & Fowler, 2008). If we aspire to live in a world with less smoking (and lower associated health care costs), we could create that world by reducing or eliminating smoking from our own lives.

Health Behaviors. Obesity has reached epidemic levels in the United states, with prevalence rates in adults climbing from 30% to 42% over the past twenty years (Center for Disease Control and Prevention, n.d.b). Let me repeat that: forty two percent of American adults are now clinically obese. The rapid rise in obesity has led to skyrocketing health care costs, and for the first time in generations, a reduction in life expectancy from 2014 to 2019 (*United Nations*, n.d.). Christakis and Fowler (2007) explored obesity in the Framingham community to see how it spreads throughout the network. Relying on body mass index (BMI), researchers found clusters of obese people, and ascertained that if an individual became obese, their friends were 57% more likely to become obese. If the friends were mutual friends (defined as when both individuals cited each other as a friend), the likelihood increased to 171%. This relationship only held true

for same-sex friendships however, as weight gain by a man did not have an association with a subsequent gain for his female friend (or vice versa). Since the Framingham data is longitudinal (spanning more than three decades), the research team was able to substantially control for genetic factors or predispositions for larger-than-normal body size (Christakis & Fowler, 2007). This study suggests obesity spreads through networks, especially among mutual friends. Thus, our own behaviors with respect to diet, exercise, and wellness could influence the behaviors of the people in our community. Table two provides a summary of the literature reviewed in this section.

Table 2

Literature Review Summary: Behavior Spread Within Communities

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
1	The spread of alcohol consumption behavior in a large social network	Rosenquist et al.	2010	Community	Consumes alcohol less	Consumes alcohol less	A healthier place
2	The Collective Dynamics of Smoking in a Large Social Network	Christakis & Fowler	2008	Community	Quits smoking	Quits smoking	A healthier place
3	The spread of obesity in a large social network over 32 years	Christakis & Fowler	2007	Community	Adopts a healthier lifestyle	Adopts a healthier lifestyle	A healthier place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.

Our Behavior Spreads Within Our Homes

The Framingham data set also gives us a glimpse into behavior contagion between spouses. Rosenquist et al. (2010) explored alcohol consumption and found significant effect sizes; if a spouse quit drinking, their partner had a 50% higher chance of also quitting drinking.

Christakis and Fowler (2008) examined smoking among spouses and found that if a married individual quits smoking, the odds that their spouse will quit smoking increased by 67%.

Christakis and Fowler (2007) analyzed obesity and found that if a spouse became obese, their partner was 37% more likely to also become obese. This study suggests that if we want our spouses to live healthier lives we could potentially catalyze those behavior changes ourselves through our behaviors.

The next two studies also explore behavioral contagion in the home (e.g. place of residence). The first examines academic studiousness and its contagion between roommates, while the second highlights voting behaviors between housemates.

Studying Behavior. Sacerdote (2001) examined college roommates at Dartmouth and found that academic performance (GPA) spread from one roommate to the other, either positively or negatively. Contagion was statistically significant for freshman students; the effect size was moderate. There was a similarly strong relationship when it came to students joining social clubs. This study is unique from others due to the random assignment of roommates, which eliminates the causal influence of homophily (the potential for roommates with similar study habits to proactively select each other as roommates) (Sacerdote, 2001). This study suggests that our study behaviors can influence those we live with. If we want to live in a world full of high performing individuals, we could help create that world through our own diligent behaviors.

Voting Behavior. Nickerson (2008) conducted two experiments to get insight into whether or not voting behavior spreads from one household member to another. The studies showed that a *Get Out the Vote* campaign in Minneapolis and Denver caused an increase in voter behavior among individuals living at the residence, including the person who did not answer the

door and therefore did not receive the *Get Out the Vote* message directly. *Get Out the Vote* campaigns have long been known to increase voter turnout, but this study specifically isolated the impact on secondary household members. The spread from primary to secondary household member was found to be 60%. These studies suggest voting behavior spreads within a household, which underscores the influence we have on those we live with. If we desire for a world with more civically minded individuals, we could help create that world by voting ourselves. Voting behavior, it turns out, also spreads over the internet as we will see later in this section. Table three provides a summary of the literature reviewed in this section.

Table 3

Literature Review Summary: Behavior Spread Within the Home

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
4	Peer effects with random assignment: Results for Dartmouth roommates	Sacerdote	2001	Home	Improves Academic GPA	Improves Academic GPA	A more educated place
5	Is Voting Contagious? Evidence from Two Field Experiments	Nickerson	2008	Home	Votes in a local election	Votes in a local election	A more politically engaged place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.

Our Behavior Spreads at Work

Over the past few decades, research has emerged that explores behavioral contagion in work settings. The findings indicate, just like in communities and within homes, behaviors spread in the workplace. Below I review five contagion studies that explore behavioral spread between: nurses and their supervisors (Vianello et al., 2010), principals and teachers (Johnson,

2008), sales managers and customer service representatives (George, 1995), undergraduate students who participated in a simulated work exercise (Barsade, 2002) and work colleagues within a large national bank (Carman, 2003).

Employee Commitment & Conscientiousness. Leaders within organizations hold influence over employees in obvious and also more subtle ways. Vianello et al. (2010) investigated the relationship between nurses and their supervisors, extraordinary leadership (in this case defined by actions of significant fairness and self-sacrifice in service to the organization) caused nurses to feel *elevated* (feeling uplifted, more optimistic about humanity), which led to more ethical behavior by those nurses. The elevated nurses were more committed, courteous, altruistic, and compliant with respect to their organizations (Vianello et al., 2010). This study suggests leader behaviors influence the behaviors of those who work for them. If we, as leaders, desire to work in environments filled with altruism and ethical behaviors, we could inspire that change through our own extraordinary leadership.

Employee Engagement & Commitment. A leader's emotional state can also positively impact employee retention and reduce employee turnover. Johnson (2008) conducted an experiment to investigate positive emotions at public schools and found that the positive emotional states of the principals spread to the teachers. Principals who reported having greater positive emotions at work faced less teacher turnover during the following summer break (Johnson, 2008). These studies suggest principals could benefit by undertaking some positive psychology interventions (PPIs) to sustainably boost their own emotional states, which could have the secondary benefit of improving teacher emotional state and teacher retention rates. Teachers at large public schools perform one of the most important tasks: educating the future leaders of the United States. They also have one of the most challenging jobs, often performing

the role of teacher, coach, facilitator, mediator, and disciplinarian. As such, principals could benefit from undertaking a consistent self-care practice (including daily rituals aimed to enhance well-being) so they can arrive to work in emotionally rich states.

Team Performance. Leadership of customer service sales associates is another area of interest for researchers. George (1995) hypothesized that leader *affect* – mood or emotional state – would directly impact team performance, even after controlling for other potential contributing factors. She conducted an experiment consisting of fifty sales managers (from a large US retailer) who led groups of sales people of between four and nine associates. George found that leader positive affect was positively associated with team performance (as rated by branch managers), even after controlling for how engaged or satisfied the leader was with respect to his or her job (George, 1995). The findings held true even when a leader didn't have a natural propensity for positive affect. As long as the leader displayed positive affect at the time in question, there was a positive impact on group outcome (George, 1995). Customer service organizations are often meritocracies with high performance standards, measured by specific quantifiable KPIs (key performance indicators). This study suggests companies could benefit by hiring sales managers who consistently perform their work with positive emotional states.

Employee Productivity / Cooperation. To compete in an increasingly global economy, companies must promote employee productivity and cooperation. Barsade (2002) conducted studies whereby participants (undergraduate students) acted out workplace scenarios. Barsade found positive emotions spread consistently among team members, which spurred better cooperation, more harmony, and increased (subjective) task performance. Cooperation improved both at the individual and group level. Barsade (2002) concluded that individuals are continually “sharing” their moods such that emotions are fluid within groups. The emotions we bring with us

to work can impact the moods, judgements and behaviors of those with whom we work. If we can cultivate a more positive mental state before we arrive to work, our colleagues and the companies we work for will be better off because of it.

Employee Charitable Contributions. In addition to having a positive influence on employee well-being, retention and performance, workplace behaviors may even encourage greater altruism. Carman (2003) examined a propriety dataset from a large US-based bank that ran a workplace charity campaign and found that employee altruism was strongly influenced by the generosity of their colleagues. Donation amounts were predictable based on: the dollar commitments of peers, and the absolute number of colleagues who had made commitments (Carman, 2003). While leaders often have an outsized influence within organizations, the influence in this charitable campaign was driven by peers (those considered to be in the same social group, especially those who were in the same salary quartile). Social norms regarding donation amounts in comparison to salary may have played a role in how individuals determined their donation amounts. While workplace charitable contributions can sometimes be marred by social pressure and judgement, this study suggests that it can also be driven by positive behavioral contagion (Carman, 2003). If we desire to work in a more generous and altruistic workplace, we could influence that reality through our own altruistic behaviors. Table four provides a summary of the literature reviewed in this section.

Table 4*Literature Review Summary: Behavior Spread at Work*

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
6	Elevation at work: The effects of leaders' moral excellence	Vianello et al.	2010	Work	Leads with moral excellence (fairness & self-sacrifice)	Becomes more committed, courteous, altruistic	A more gainfully employed place
7	I second that emotion: Effects of emotional contagion and affect at work	Johnson	2008	Work	Leads with positive emotions or positive affect	Becomes more committed to job (less likely to quit)	A more gainfully employed place
8	Leader Positive Mood and Group Performance: The Case of Customer Service	George	1995	Work	Leads with positive emotions or positive affect	Team performance improves	A more productive place
9	The Ripple Effect: Emotional Contagion and its Influence on Group Behavior	Barsade	2002	Work	Performs work with positive emotions / optimism	Team performance & team cooperation improve	A more productive place
10	Social Influences and the Private Provision of Public Goods: Evidence from the Workplace	Carman	2003	Work	Donates or donates generously to charity	Donates or donates generously to charity	A more generous place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.

“When any original act of charity or of gratitude, for instance, is presented either to our sight or imagination, we are deeply impressed with its beauty and feel a strong desire in ourselves of doing charitable and grateful acts also.”

- Thomas Jefferson

Our Behavior Spreads to Strangers

What impact might our behaviors have on those we do not know, those who are not living in our homes or our communities, or those who do not work with us? Would our behaviors have a consequential influence on their behaviors too? Researchers have conducted experiments with strangers and found behavior contagion does extend to those settings.

Next, I will review six studies that explore the nature of behavior contagion among strangers, each of which offers insight into causality (e.g. the studies have experimental designs). Although causality was a strength of each of these studies, a weakness was the limited ability to determine external validity (e.g. are these results generalizable to other populations and other settings).

The first two studies explore altruistic behavior spread within cooperative games. The subsequent four studies examine exemplary moral behavior (behavior marked by character strengths expression or virtue-filled) and how it can inspire others to perform (and desire to perform) prosocial behaviors such as performing acts of kindness, volunteering, helping with a laborious task, or mentoring. In two of the studies, participants even reported a desire to become a better person. Powerful stuff!

Altruism / Generosity. Fowler and Christakis (2010) added to their extensive evaluation of real-world social networks when they analyzed the results of an experiment involving 240 students who participated in a cooperative game (Fehr & Gächter, 2002). Throughout the experiment, interactions and identities were kept confidential so participants did not know who they were engaging with. Students were given a choice: to donate some or all of their allocated money to the group (which would compound and benefit the other group members) or to keep the money for themselves. The participants played five single-shot rounds, in each round they would encounter new participants and a fresh game, thus participants would be unaware of any prior selfish or selfless behaviors from the other participants. If individuals were to act with self-interest, they would give little or no money to the group. If they were to act generously, they would give some or all to the group. If there was no contagion from round to round, then you'd expect prior behaviors by others to have no impact on current cooperation levels (Fehr &

Gächter, 2002). Fowler and Christakis (2010) found cooperative behaviors spread throughout the games, both over time (e.g. virtue resonance) and to new individuals who were not involved in the original cooperation game. They observed cooperative influence up to three degrees (supporting earlier work from Framingham) and cooperative contagion that persisted throughout the five rounds. The sum total of the cascading (through people and across time) was a tripling of the original generosity. For every dollar that was contributed to the public good in the first round of the experiment, two more dollars were incrementally given by others due to the increased generosity. Interestingly, researchers found no evidence that selfish behavior spread throughout the network. instead, a majority of participants chose not to maximize their own payouts, challenging conventional economic theory which proposes individuals act with rational self-interest. This research suggests generosity spreads in a cascading fashion, uplifting the collective good over time and extending out multiple degrees.

Tsvetkova and Macy (2014) conducted a randomized controlled experiment that tested generosity contagion among strangers from the lens of two different mechanisms: generalized reciprocity (I become generous because I am the recipient of generosity) and third-party influence (I become generous after witnessing generosity between two other people). The research team found generalized generosity contagion; those who received kindness paid it forward to others. The study also showed that individuals who merely observed (but did not directly receive) acts of generosity were also significantly more likely to be generous towards a stranger (Tsvetkova & Macy, 2014). Our individual generosity can spread throughout groups and even to people who only witnessed our good deeds (but were not themselves recipients).

Kindness. Another study that demonstrated behavior contagion from witnessing acts of moral behavior was conducted by Algoe and Haidt (2009). They found participants were more

motivated to perform acts of kindness after they witnessed acts of moral virtues (which created feelings of “elevation”), even though they themselves were not the beneficiary of the moral acts. The research team enlisted undergraduate students for the study, randomly assigned them to one of three groups, and had each group watch one of three short videos. The videos were meant to elicit one of the following emotional responses: elevation (cultivated when witnessing acts of moral excellence), admiration, or amusement. The participants were instructed to keep a written record for the following three weeks to record instances in which they witnessed acts of either elevation, admiration, or amusement (depending on which group they had been assigned to). The participants recorded key details about each “event,” including their feelings, physical sensations, and motivations or actions. Among the three groups, only the “elevation” group reported an increase in motivation to perform acts of kindness, and also exhibited the strongest motivations to become a better person. The admiration group aspired to achieve personal success while the amusement group had no discernable motivational outcomes (Algoe & Haidt, 2009). This study suggests our own moral good deeds could inspire people around us to want to become better themselves.

Helping / Volunteering. Schnall et al. (2010) conducted two different studies examining the relationship between “elevation” (learning of another person’s good deeds) and prosocial behaviors, finding that elevation caused participants in study #1 to be more likely to volunteer for an unpaid future study and in study #2 to spend nearly twice as long helping the experiment organizer with a laborious task. To provoke feelings of elevation, the participants in the experimental group in study #1 were shown a clip from *The Oprah Winfrey Show* (where musicians got to express deep gratitude to the teachers who helped them on their path to success). The participants in the control group in study #1 watched an Oceanic documentary by

David Attenborough. The elevation group was more moved, more uplifted, more optimistic about humanity, more interested to help others, and more interested to become a better person. In study #2, the elevation participants spent significantly more time helping the experimenter by filling out a “boring” questionnaire. Given the experimental nature of the study, the researchers found the evidence convincing that witnessing moral virtue or acts of integrity leads people to become more helpful, more patient, and to want to become better people (Schnall et al., 2010). I imagine witnessing Gandhi’s many acts of moral courage inspired countless of his followers to want to become better people.

Schnall and Roper (2012) conducted a similar experiment two years later and found that feelings of elevation (induced by the same *The Oprah Winfrey Show* video) were more potent when individuals first reflected on a time where they put their virtues into action (e.g. character strength expression), especially when they recalled a prosocial scenario which benefitted others. The study was designed to evaluate whether or not increased prosocial behaviors post-elevation experiences were due to social comparison (e.g. they feel shamed into helping due to a feeling of moral inadequacy) or due to increased motivation that was genuine and for the greater good. The participants in the experimental (e.g. elevation) group who had reflected on prosocial experiences spent significantly more time completing a questionnaire as a favor to the experimenter. The findings suggest that moral inadequacy (e.g. guilt, shame) was not the motivating force, as time spent reflecting on prior prosocial behaviors would enhance one’s self-regard, not reduce it. Since helping behavior increased in that scenario, researchers concluded that elevation-induced helping was prosocial and sincere (Schnall & Roper, 2012).

Mentoring. Thomson et al. (2014) conducted an experiment which found that exposure to stories of moral exemplars (which induced feelings of elevation) caused participants to engage

in mentoring behaviors. In this study, the research team recruited US-based participants via *Amazon Mechanical Turks*, a platform for hiring labor for on-demand micro tasks. The participants were compensated for their participation in the study. The 213 participants were randomly assigned to either the experimental or control group. The experimental group was asked to read a written story designed to invoke feelings of elevation (a story of a morally exceptional human being who tipped a waitress all the money he had so she could buy Christmas gifts for her children) while the control group was asked to read a written story that was morally neutral (an unremarkable story about two individuals who went on a dinner date). The experiment was run with three different iterations, and the findings revealed that participants who read the story of moral excellence were more likely to: 1) gather information about mentoring opportunities, 2) give advice to less experienced high-school seniors, and 3) have positive attitudes about mentoring. Importantly, neither of the written stories were related to mentoring. The findings suggest that the mere observation of acts of moral exceptionalism can motivate individuals to become more likely to mentor. How would the world be different if more people lived with kindness, selflessness, and high moral character? Table five provides a summary of the literature reviewed in this section.

Table 5*Literature Review Summary: Behavior Spread to Strangers*

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
11	Cooperative behavior cascades in human social networks	Fowler & Christakis	2010	Strangers	Gives generously to strangers	Gives generously to strangers	A more generous place
12	The social contagion of generosity	Tsvetkova & Macy	2014	Strangers	Gives generously to strangers	Gives generously to strangers	A more generous place
13	Witnessing excellence in action: the 'other-praising' emotions of elevation, gratitude, and admiration	Algoe & Haidt	2009	Strangers	Acts selflessly to help those in need (e.g. the homeless)	Desires to do random, nice, considerate things for others	A kinder place
14	Elevation leads to altruistic behavior	Schnall et al.	2010	Strangers	Expresses gratitude to people who helped shape their life	Becomes more likely to volunteer or to help others	A more helpful place
15	Elevation puts moral values into action	Schnall & Roper	2012	Strangers	Expresses gratitude to people who helped shape their life	More likely to help with a favor	A more helpful place
16	Elevation and mentoring: An experimental assessment of causal relations	Thomson et al.	2014	Strangers	Performs a moral act (selfless and generous)	Becomes more likely to commit to becoming a mentor	A more helpful place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.

Our Behavior Spreads Over the Internet

Behavior contagion appears prolific even over the internet. The internet is nearly ubiquitous; five billion users are online. Ninety-six percent of the world owns smartphones and the average Internet user spends seven hours online each day (Kemp, 2022). If the average person sleeps eight hours per night, then people spend nearly half of their waking hours online. It's as if we're already living in virtual reality, just a low-tech early version. Next, we highlight two areas of research that investigate the ways our behaviors spread to other people over the internet, voting and health.

Voting Behavior. During the 2016 presidential election, less than 56% of voting-age people cast a vote, a voter turnout percentage that ranked the United States near the bottom of OECD (Organization for Economic Cooperation and Development) countries (Desilver, 2020). Earlier we saw that voting behavior can spread from one person in the home to another. Now let's explore research which determined whether or not voting behavior spread on the internet. Bond et al. (2012) conducted an experiment and found that political mobilization messages (e.g. *Get Out the Vote*) on Facebook influenced voter behavior, including users who did not even receive the initial message. The campaign impacted two degrees of friendships beyond the targeted user, including their friends and friends' friends. Voting contagion spread nearly entirely within *close friendships* (defined by volume of user activity back-and-forth). The contagion was meaningful overall; the delivery of the original political message spurred 60,000 voters to vote, but the incremental effect from contagion contributed another 280,000 voters. For every one voter influenced directly, another four voted due to behavioral contagion. The study design allowed researchers to infer that the voting message caused the voting uptick throughout the social network (Bond et al., 2012). This research suggests our individual voting behavior and our willingness to share it on social media can be a powerful way to influence overall voter turnout.

Health Behavior. Centola (2010) conducted an experiment to isolate behavior contagion online within the health sphere. Centola (2010) found participants were more likely to register for an online health forum if their "health buddies" (anonymously assigned partners) actively engaged with online health forums. The probability of joining increased significantly after being notified that a second "buddy" had followed an online forum. The results suggest health behaviors can spread through our online connections, even when the connections involve *weak ties* (friends who were assigned to us vs. real-world friends). This research suggests the

information we share on social media can influence our friend networks, including those we have just met or do not know personally. Table six provides a summary of the literature reviewed in this section.

Table 6

Literature Review Summary: Behavior Spread Over the Internet

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
17	A 61-million-person experiment in social influence and political mobilization	Bond et al.	2012	Internet	Votes in a presidential election	Votes in a presidential election	A more politically engaged place
18	The spread of behavior in an online social network experiment	Centola	2010	Internet	Registers for an online forum to obtain health information	Registers for an online forum to obtain health information	A healthier place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.

Whether it be through our friends, our families, strangers, or over the internet, scientific literature suggests our behaviors have a ripple effect throughout our networks

Conclusion: When We Change

In section IX, we explored the downstream consequences that occur when an individual lives with more virtue. We reviewed eighteen pieces of research that identified behavior spread throughout communities, homes, workplaces, among strangers and over the internet. We learned that behaviors spread throughout different types of relationships, including spouses, friends, work colleagues, employees and supervisors, and anonymous participants in cooperative games. We explored contagion across a variety of behaviors, including health behaviors, voting

behaviors, acts of kindness, studying habits, volunteering and helping behaviors. Morally exceptional behaviors even inspired others to want to become better people.

We learned that behaviors can spread through networks up to three degrees, and that our social connections tend to magnify what we bring to them (Christakis & Fowler, 2009). It is generally understood that our friend groups shape us, as summarized by Jim Rohn when conveyed that we become similar to the five people who we spend the most time with. Less understood though is the fact that we also shape our networks. We influence each of the five people we spend the most time with and we also influence people up to three degrees away from us: our friends' friends' friends. While it is certainly important to surround ourselves with great people, it is also important to live well so that we uplift those very same people. Our networks shape us, but we also shape our networks (Christakis & Fowler, 2009).

Our influential power may be even greater than was highlighted in the research. The three degrees of influence rule is based on averages across a network, but some people will certainly have more influence than others. Those at the center of a social network, or those who live exceptionally virtuous lives, may *elevate* others on an hourly or daily basis. Gandhi's influence, for example, was so pronounced it reached hundreds of millions of Indians (Easwaran, 2011).

"I'm starting with the man in the mirror, I'm asking him to change his ways. And no message could've been any clearer. If you wanna make the world a better place, take a look at yourself and then make a change."

- Michael Jackson, Man in the Mirror

X. Conclusion

Humanity has made critical advancements in life expectancy, health, food security, access to education, literacy, political stability, human rights, and peacefulness, but human flourishing levels continue to flounder. For example, in Europe, flourishing rates range from fifteen to thirty percent in most countries; sadly, some countries sit below ten percent (Huppert & So, 2013). Meanwhile, American adults are more medicated, more addicted, more obese, and more in debt than at any other point in history (Brown, 2010). Unsurprisingly, the vast majority of humans yearn for a better world (World Economic Forum, 2020). We desire for people to live with more virtue, to be kinder, fairer, more honest, more patient, and more loving.

Positive psychology aims to help individuals, communities, and societies to flourish, highlighted by its moonshot goal to create a world whereby 51% of people are flourishing by 2051 (Seligman, 2011). A common pathway pursued in support of that goal is to go out and try to change individuals, communities, and societies. In essence, to *Do the Change*, whereby we go out and try to help other people to live with more virtue or to flourish across PERMA dimensions, but without first taking the important step of embodying those changes ourselves. This appears to me to be how we got to where we are today. But to achieve our moonshot goal, I believe we need to supplement the *Do the Change* strategy with another approach. As outlined in this paper, the *Be the Change* pathway has demonstrable potential to effect positive change in others and to ripple throughout societies.

Even in our own lives, we can have substantial impact. If for example, we have thirty friends (including family, colleagues, etc.), our friends have thirty friends, and our friends' friends have thirty friends, our behaviors could influence up to 27,000 individuals in big or small ways. Put differently, if everyone in the world is connected within six degrees of separation, then

our own influence (up to three degrees) gets us halfway towards influencing everyone in the world. Imagine what is possible if many of us took the steps necessary to transform our lives. As we've seen in this paper, our own actions can create a world that is kinder, healthier, more educated, more politically engaged, more altruistic, more gainfully employed, more productive, more generous, and more helpful.

An ancient piece of wisdom with an unknown origin reminds us “with great power comes great *responsibility*.” The decisions we make in our lives lead to a ripple effect that has consequences for dozens, hundreds, or even thousands of people, including those we care for deeply. Choosing to live a virtuous life catalyzes our own well-being. Perhaps just as importantly, it uplifts the collective. It seems – just as true – that with great power, comes great opportunity.

"The difference between what we do and what we are capable of doing would suffice to solve most of the world's problems".

- Mahatma Gandhi

XI. Limitations and Future Directions

Limitations

Research supports the theory of behavior contagion, but additional research could be conducted to address some limitations of existing studies. The Framingham Heart Study data was observational and not experimental; thus it was not possible to infer causation. The researchers conveyed that there might be three reasons for the clustering: 1) Homophily (people gravitate

toward people like them, with similar behaviors or lifestyles), 2) Confounding variables (a liquor store opens up in the neighborhood leading connected individuals to drink more), or 3) Induction (individuals in the network influence other individuals). The researchers utilized various statistical techniques to rule out homophily and other confounding variables and were fortunate enough to have longitudinal data (over decades) which made it easier to isolate the impact of person-to-person induction as opposed to homophily. Nevertheless, causality was difficult to ascertain given the observational nature of the data.

In a variety of their studies, Christakis and Fowler (2009) referred to the behavioral spread found examining the Framingham Heart Study data as the *three degrees of influence rule*. The authors later provided clarifying words to ensure other researchers knew that the *three degrees rule* pertains to clustering more so than influence, as the clustering was observed absolutely whereas causality was not ascertainable with confidence (Christakis & Fowler, 2013). The authors advised that the rule is meant to be evocative more than any final answer on the topic of behavior spread.

Another limitation is the generalizability of the findings. Several studies recruited participants via *Amazon Mechanical Turks*, a relatively new sourcing mechanism for researchers. Other studies used student participants who may not represent the general public overall. Some people might be more or less influenceable and studies might lose that important distinction when they look at the aggregative level. As such, the external validity of these experiments is unknown and therefore it is not certain these findings can be assumed to replicate in real-world settings.

The literature review uncovered an apparent trade-off: either studies examined real-world relationships at scale (but lacked internal validity - the ability to infer causality) or studies

included experimental set-ups which inferred causality but posed questions about external validity (due to study participants that might not represent the general population). This field would benefit from more longitudinal, real-world studies where causality can be inferred. The research from Hampton and Wellman (2003) gets close as it studied suburbs of Toronto which applied to receive a high-speed internet connection to the home, but only some of the suburbs ended up being connected, and connectivity occurred at random. This dataset includes experimental and control groups for a population that may have higher external validity, offering some of the same benefits of the Framingham Heart Study with potentially fewer limitations.

Future Directions

The literature base investigating social, behavioral, and emotional contagion has proliferated in past three decades. Future research could enhance our understanding of how these phenomena spread throughout groups, workplaces and societies. To further demystify what Gandhi termed the – *divine mystery supreme* – the fact that individuals are connected to the collective. Here are some suggestions of where researchers and academics could set their sights to further the field:

- A majority of the existing research pertains to behaviors that would fit nicely under the “caring” virtue category (such as kindness, love, and fairness) or under the “self-control” virtue category (such as drinking, smoking, and health). Future research could investigate behaviors that belong to the “inquisitiveness” category (such as reading, cooking, or playing a music instrument) to see if those behaviors also spread throughout networks.
- It might be worthwhile to investigate the creation of a *Be The Change* self-report scale that measures the degree to which an individual is living in alignment with their highest ideals (or in alignment with the way they wish others would be). The resultant data could be used to see if those who embody the *Be The Change* ethos are more successful in areas

of flourishing, subjective well-being, or even leadership.

- A significant piece of this capstone is based on the extensive work done by Christakis and Fowler (2013), including the studies focused on the Framingham community. Future researchers could try to mine similar data from other communities (especially those in other countries) to see if the findings can be replicated.
- The Framingham studies were observational and thus, causality couldn't be inferred. Future studies could track similar data while introducing causal mechanisms (such as new behaviors or habits) to individuals to see how those behaviors flow through the network (akin to when doctors inject dye into the bloodstream to see how it flows through the body).
- Future research could focus on what's possible as opposed to what's probable for the average person. Exemplars with significant influence could be studied, and we might learn ways to create new exemplars who are able to induce behavior changes through populations. Could the influence for extroverts with robust communities networks extend out to four or five degrees?
- The positive psychology research suggests well-being interventions have a small impact overall (White et al., 2019). Future research could include longer-duration interventions that measure the impact of those who are fully committed to healthy habit formation.
- Certain research highlighted in this paper measured subjective intentions of participants. Future research could include more objective measures to ensure that intentions made were genuine and do indeed lead to new behaviors.

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XIII. Appendix

Table seven summarizes the 18 behavioral studies that were reviewed in Section IX.

Table 7

Literature Review Summary: Behavior Spread Across Dimensions

Literature Review: When We Change					High-Level Summary & Implications		
#	Research Title	Author(s)	Year	Setting	If an Individual ...	then the Collective ...	and the world becomes ...
1	The spread of alcohol consumption behavior in a large social network	Rosenquist et al.	2010	Community	Consumes alcohol less	Consumes alcohol less	A healthier place
2	The Collective Dynamics of Smoking in a Large Social Network	Christakis & Fowler	2008	Community	Quits smoking	Quits smoking	A healthier place
3	The spread of obesity in a large social network over 32 years	Christakis & Fowler	2007	Community	Adopts a healthier lifestyle	Adopts a healthier lifestyle	A healthier place
4	Peer effects with random assignment: Results for Dartmouth roommates	Sacerdote	2001	Home	Improves Academic GPA	Improves Academic GPA	A more educated place
5	Is Voting Contagious? Evidence from Two Field Experiments	Nickerson	2008	Home	Votes in a local election	Votes in a local election	A more politically engaged place
6	Elevation at work: The effects of leaders' moral excellence	Vianello et al.	2010	Work	Leads with moral excellence (fairness & self-sacrifice)	Becomes more committed, courteous, altruistic	A more gainfully employed place
7	I second that emotion: Effects of emotional contagion and affect at work	Johnson	2008	Work	Leads with positive emotions or positive affect	Becomes more committed to job (less likely to quit)	A more gainfully employed place
8	Leader Positive Mood and Group Performance: The Case of Customer Service	George	1995	Work	Leads with positive emotions or positive affect	Team performance improves	A more productive place
9	The Ripple Effect: Emotional Contagion and its Influence on Group Behavior	Barsade	2002	Work	Performs work with positive emotions / optimism	Team performance & team cooperation improve	A more productive place
10	Social Influences and the Private Provision of Public Goods: Evidence from the Workplace	Carman	2003	Work	Donates or donates generously to charity	Donates or donates generously to charity	A more generous place
11	Cooperative behavior cascades in human social networks	Fowler & Christakis	2010	Strangers	Gives generously to strangers	Gives generously to strangers	A more generous place
12	The social contagion of generosity	Tsvetkova & Macy	2014	Strangers	Gives generously to strangers	Gives generously to strangers	A more generous place
13	Witnessing excellence in action: the 'other-praising' emotions of elevation, gratitude, and admiration	Algoe & Haidt	2009	Strangers	Acts selflessly to help those in need (e.g. the homeless)	Desires to do random, nice, considerate things for others	A kinder place
14	Elevation leads to altruistic behavior	Schnall et al.	2010	Strangers	Expresses gratitude to people who helped shape their life	Becomes more likely to volunteer or to help others	A more helpful place
15	Elevation puts moral values into action	Schnall & Roper	2012	Strangers	Expresses gratitude to people who helped shape their life	More likely to help with a favor	A more helpful place
16	Elevation and mentoring: An experimental assessment of causal relations	Thomson et al.	2014	Strangers	Performs a moral act (selfless and generous)	Becomes more likely to commit to becoming a mentor	A more helpful place
17	A 61-million-person experiment in social influence and political mobilization	Bond et al.	2012	Internet	Votes in a presidential election	Votes in a presidential election	A more politically engaged place
18	The spread of behavior in an online social network experiment	Centola	2010	Internet	Registers for an online forum to obtain health information	Registers for an online forum to obtain health information	A healthier place

Note. Table Created by Author to Summarize and Distill Major Findings and Implications. Full Bibliographical Information for Underlying Research Available in Reference Section.