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Integrated Well-being: Positive Psychology and the Natural World

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Integrated Well-being: Positive Psychology and the Natural World

Abstract

In the web of life, we are all interconnected. This connectivity extends beyond the human domain and towards systems much larger than ourselves—the whole of the Earth’s species. As this paper illustrates, this connectivity with non-human life is innate, and deepening that connection to nature has positive influences on our well-being and optimal functioning, above and beyond the mere utilitarian value that our environment affords. Whether looking at nature through a window or being fully immersed, wild spaces are good for our mental and physical health, our likelihood to engage in ecological behaviors, and our personal and community resiliency and well-being. Initiatives that recognize the importance of wild spaces also build powerful, positive, sustainable communities. When positive psychology notions of well-being are more systems-based and nature-inclusive, we get a deeper and more holistic understanding of our own psychology. We are also better prepared for a world in which all of life—humans today and future generations, as well as plants, animals, and planetary processes—can flourish regeneratively. From an examination of the individual to a reflection of our interdependence with the whole of the world, positive psychology has the potential to unmask a complete picture of all it means to be alive and thriving.

Keywords

well-being, nature, environment, systems thinking, ecology, happiness, environmental movement, positive psychology, sustainability

Disciplines

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Integrated Wellbeing: Positive Psychology and the Natural World

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University of Pennsylvania

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Advisor: Brianna Booth

August 1, 2012

Integrated wellbeing: Positive psychology and the natural world
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Dedicated to my father, who taught
me my first and best lessons
in connecting with nature

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Introduction

Every now and then the air around me is filled with a sense of wonder. It seems to happen in every occasion in which new ideas and connections begin to take shape. Something powerful seems to occur in this transmission of knowledge and ideas, the establishment of relationships, the energizing of networks, and the sensation of being connected to something much larger than the self. One such occasion took place recently, during a local foods dinner organized by a nonprofit with which I am closely involved. It went something like this.

A couple years ago, I took part in a scintillating feast in a rustic barn in the woods of New Hampshire, my home state. The event involved 100 community members, dozens of volunteers, and more than 40 farms, restaurants, and organizations. The meal was crafted by local chefs who used fresh produce, meat, and cheese from local farmers to create gourmet dishes. This event sizzled with energy, as the room bustled with the dual pleasures of eating and making new friends, and also that glow of meaningfully supporting local food and community members, which enhances the resiliency of community.

Partnerships were forged amongst farmers, chefs, and community members, helping to build a stronger community voice and sense of belonging. Seventy percent of attendees gained a renewed commitment to support local food and agriculture and sixty-five percent gained a deepened sense of community (A. Johnson, personal communication, November 23, 2010). Attendees left feeling like they were part of a bigger picture, a greater effort to strengthen local economy, build stability within an uncertain environment, and create a network of supportive neighbors who can help each other succeed through hard times. These types of events ensure the roots of well-being run deep, embedding them into sustainable, resilient communities that are better equipped to support the well-being of all of life—humans and the plants and animals with which we share a home.

There was a moment in which I found myself overlooking this majestic feast from the balcony of the barn, seeing the long, handmade tables twinkling with candles and flushing with brilliant bouquets made from edible plants, seeing 100 people laughing, telling stories, and sharing wine, and seeing nutritious and conscientiously grown or raised food making its way into happy bellies. That was when the magic started, seeing all these connections being born amongst people, plants, animals, and sensing a shared hope for making our community a better place. In this moment, I sensed that the well-being of the community could not be isolated into component parts, but that it involved a large, collaborative system of healthy relationships in order to be properly sustained over time.

The above story is sprinkled with information that a positive psychologist might gravitate toward. One could explore how budding relationships affected the well-being of people in the room, how the pleasures of eating delighted their senses, the feelings of the guests knowing their ticket sales supported a charity organization, or the meaning in their hearts or minds while participating in a cause larger than themselves. The environmental movement cares about the exact same things, as well as how the organically grown salads supported the livelihoods of the local farmers and the land they harvest on, or how the e-invitations and natural gourd and hay décor saved resources, or how values of community and ecological-mindedness were shared and renewed to strengthen sustainability.

As I see it, the psychology of well-being and the well-being of the planet work to feed and strengthen each other. There are many examples and opportunities out there to build upon the well-being of people while also being mindful to build upon the well-being of life that surrounds us. Doing so not only adds deeper meaning to our efforts, but also helps ensure the well-being of future generations. It allows us to expand our awareness toward an integrated version of well-being, one that understands the importance of nature for our livelihood.

As statistics show, our modern pursuit of well-being often comes at the expense of the livelihood of other forms of life around us, and inadvertently our own. At our current rate of consumption, in 2050 we would need nearly three Earths to meet the demand of resources for the anticipated nine billion people (World Wildlife Federation, 2010). Three Earths do not exist of course, and the one we have will have to be enough. Technology, and to some extent government, will play a role in helping to create efficiency and cut down on resource demand, though I believe people will be the most powerful leaders in the march to overcome unnecessary consumption and create a higher demand for what is really important in life—those things like love and connection and family and meaning, which money cannot buy (Diener & Seligman, 2004).

As I come to better understand my role in creating more integrated well-being, two questions I ask myself are: “How can *I* contribute to the flourishing that is this beautifully intricate web of people, environmental processes, and other forms of life? How do *nine billion people* work together to meet our resource needs through our one generous Earth, while allowing the whole of Earth’s species, as well as future generations, to thrive?”

Fortunately, our answers will have some heart value, for as the above story shows, taking positive environmental actions can be enormously rewarding, building social and communal ties while giving us deeper meaning and a commitment to bettering our neighborhood. Furthermore, as this paper will illustrate, we have an innate draw to the non-human life around us, and deepening that connection to nature has positive influences on our well-being and optimal functioning, above and beyond the mere utilitarian value that our environment affords. In exploring this connection and taking a systems-based approach to well-being, we can contribute to an upward spiral of not only psychological flourishing, but also whole planet flourishing.

In part one of this paper, a brief history of the environmental movement will demonstrate how it has recently begun shifting toward empowerment, hope, and positive solutions for change. Emphasizing tactics that are fun, meaningful, and relationship building, organizations are discovering more effective ways to inspire and empower. While not ignoring the reality of environmental problems, they work toward more strategic communication that shares information in ways that allow for creative solutions amongst all stakeholders to unfold. This approach counters messages that increase negative affect or seek to pit various stakeholders in laborious and often fruitless “us versus them” competitions.

Following this is an overview of positive psychology, a field that studies not what we want less of in life (i.e. those things that make us miserable), but what we want more of and how to achieve it. This field discovers people at their best, examining constructs such as meaning and purpose, strengths and virtues, positive interventions, and positive institutions, to name but a few. Positive psychology offers both valuable research for the environmental movement as well as the opportunity to expand its understanding of well-being to incorporate the human interrelationship with the natural world.

The next few sections explore our relationship with nature in greater depth. Nature is often referred to as the plants, animals, and landscapes that make up the world around us, discounting humanmade structures. Throughout the paper, this term is used rather loosely, at times relating to small patches of flora and fauna and at other times large expanses. In some instances, nature is also used in ways that are inclusive to humans and humanmade structures. This is done intentionally to point out the fact that the dichotomy distinguishing humans and nature is illusionary. Humans are an equal extension of the natural world.

The majority of part one describes and highlights the need for systems thinking, or thinking in terms of whole systems rather than parts. This lays the foundation for a more thorough examination of the ways in which we have an innate tendency to associate with the

natural world and derive positive influences from that relationship. For example, immersion in nature promotes intrinsic motivations, which in turn leads to ecological behaviors, personal well-being, and cooperative and pro-social behavior (Brown, & Kasser, 2005; Shultz et al., 2005; Weinstein, Przybylski, & Ryan, 2009). Further research shows how immersion in nature contributes to mental, physical, and community health and well-being.

In part two of this paper, applications of positive psychology within a nature-inclusive mindset are explored. Part two has yet to be fully completed, though some initial ideas are presented, leaving open the opportunity for deeper exploration.

As a whole, this paper offers a hopeful take on the environmental movement and a promising opportunity for well-being research to gain a more holistic understanding of human thriving. It anticipates that solving some of the ecological instabilities of the last century will bring out the best of what it means to be alive. It also anticipates that only when we discover that we are inextricably tied to this web of life will we be able to fully contribute to a wholly flourishing Earth; an Earth in which all of life—humans now and in the future, and other species—can thrive sustainably.

Part I: Toward a Deeper Understanding of the Connections Between Positive Psychology and Nature

The Changing Environmental Movement

Beginning in the late nineteenth century with naturalists such as John Muir and Henry David Thoreau, who advocated for land conservation and reverence for the Earth, the environmental movement boomed in the affluence of the sixties with a flux of protests, political lobbying, and grassroots organizing. These efforts visually documented how Americans were committing violations against nature in their own backyards, by polluting rivers, endangering health through use of pesticides, and choking up cities with smog. By tapping into the energy and optimism of the times, significant social change was made

(Nordhaus & Shellenberger, 2007). However, with the economic and political transformations of the late seventies, eighties, and nineties, the environmental movement failed to adjust its methods to accommodate changing American values and changing environmental complexities.

Climate change was growing in scientific and public awareness, an expansive though intangible threat that could not rely on earlier motivations of “not in my backyard.” “Doom and gloom” images of impending catastrophe no longer had the same effect, as distant dangers and those that make us think of death often reduce the motivation to act (Fritsche & Häfner, 2012). Ironically, being reminded of our mortality leads to more materialistic behavior, worsening the problem at hand. Furthermore, overly rational and science-based arguments are not inspirational. As polls continue to show, Americans are losing interest in “the environment” (Saad, 2010, April 22).

We now enter into the modern era in which organizations are beginning to shift their focus from threat- and deficit-based models of education and policy to broader, more fulfilling, and more possibility-based models (Lappé, 2011). Without under- or over-emphasizing the risks, environmental organizations can provide a framework of education while simultaneously cultivating a culture of hope, innovation, possibility, creativity, and empowerment. The environmental movement is in the midst of a paradigm shift, one that taps into our human potential and aspirationally asks, “What are our finest visions for the future?” With better understanding of human social and psychological needs, the movement is re-defining itself in more progressive ways, dedicating itself to a “politics of gratitude, possibility, and overcoming” (Nordhaus & Shellenberger, 2007, p. 187), while emphasizing people’s strengths, not weaknesses and limitations.

A few of the movers and shakers of this burgeoning approach include Center for Ecoliteracy, the Breakthrough Institute, the Real Food Challenge, 350.org, the Pachamama

Alliance, Center for a New American Dream, the Transition Movement, the Shift Network, and the No Impact Project. Additionally, community-based environmental nonprofits, farmers markets, local currency systems, and conservation committees are springing up in increasing numbers and many are taking a positive spin in their work. These types of initiatives help empower people to better their own lives, while also bettering the planet in ways that build hope and shape out ideas for the kind of future we want to strive toward.

This shift in approach is happening somewhat organically, as ordinary citizens rise up to become leaders in their own communities. Many are taking actions not with the mindset of solving problems, but of strengthening their lives and community, without necessarily knowing what will result. Psychologist Harré (2011) explains that sustainability is not a problem waiting to be solved, and that thinking of it as such will create contention and arguments over which solution to pursue. Rather than, Harré suggests sustainability is a way of life. It is an opportunity to live by the belief that a better world is possible and that citizens can unite to work together to create it. She goes on to say that it is not so important what people do, but rather that they are willing to risk trying new roles and behaviors that might turn out to have a positive impact. This signals to others that a sustainable world is valued in the community.

Colin Beavan, activist and founder of the nonprofit No Impact Project, agrees (Beavan, 2011, February 15). He calls himself an “accidental activist”, after a year-long experiment he undertook to have zero impact on the environment. This experiment gained him international recognition nearly overnight. He described that the hardest part about his experiment wasn’t living without electricity, making no trash, or commuting using only foot-power, but rather his fear that this seemingly crazy notion about how to change the world might be wrong. Beavan concluded, “It’s time for every citizen with a good idea to get to

work, to trust yourself, to start. Sooner or later you have to accept the fact that you need no other authority than your good intentions and your loving heart” (p. 2).

More importantly perhaps, both Harré (2011) and Beavan (2011, February 15) also believe in having a strong focus on positive strategies. They argue it is possible and even more effective to create a sustainable world in ways that are fun, meaningful, and build stronger relationships. Lappé (2011) agrees, citing that too often the messages we receive from the environmental movement or media are negative and disempowering, when in fact there are numerous reasons to be hopeful and that there is value in orienting our thinking toward the positive. It not only provides us with a more realistic assessment of our societal condition, but also allows us to access inner resources that will better help us to thrive. For example, contrasting the common belief that saving the planet will require overcoming selfish, competitive, and materialistic characteristics of human nature, Lappé emphasizes six powerful and positive qualities of human nature that allow us to be effective contributors of social change: cooperation, empathy, fairness, efficacy, meaning, and imagination and creativity. Rather than focusing on problems and the destruction of nature, a science of “positive ecology,” as it has been termed, focuses on the integration of human well-being and sustainability, guiding us toward ways of leading “the good life” in ways that are personally meaningful and environmentally sustainable (Schmidt, 2005).

As positive psychologists have discovered, orienting to our strengths and capitalizing on positive emotions allow us to build up resiliency, expand our problem solving abilities, be more innovative, enhance our relationships with others, and try on new behaviors (e.g. Fredrickson, 2009; Reivich & Shatte, 2002). The more environmental organizations can help their constituents achieve flow, feel fulfillment in serving and being with others, and create meaning in their lives, the more they will garner support (Nordhaus & Shellenberger, 2007). As the environmental movement continues its shift toward models of possibility and

empowerment, meaning and fulfillment, it will have much to gain from the field of positive psychology.

The role of negativity in message crafting. Before we fully discount negativity, I will briefly examine the role it plays in the environmental movement. Scott Sherman (2003) researched more than 100 variables in 60 cases of communities fighting for environmental justice and found that exposing injustice was one of three key processes involved in successful outcomes. Through his findings of “what works,” he developed a theory of Transformative Action, which is now being taught in hundreds of universities across the world (S. Sherman, personal communication, December 8, 2011). His process: (1) Expose injustice (shed light on the problem), (2) Social aikido (make friendly connections with everyone, including the supposed adversary), and (3) The constructive program (come up with a better alternative together) (Sherman, 2011). In addition, Sherman emphasizes the need for a statement of the problem, a strong sense of inner purpose, a vision for the future, and a strategic plan.

The effectiveness of exposing injustice and the tendency of the environmental movement to provide negative information may be explained by “prospect theory” (Kahneman, 2003). Kahneman reports that we have a bias toward the negative, due in part to an unequal emotional valence we give to losses versus gains. For example, losing \$100 will be more distressing to us than the positive feelings of gaining \$100. Therefore, people will take greater risks to avoid loss than they will take to obtain a gain. Since losses hurt worse than gains give pleasure, negative information becomes a salient feature of our environmental awareness and subsequent decision-making processes.

That said, there are two important distinctions in Transformative Action that make it a much more effective process than other types of environmental messaging. The first is that exposing injustice is just one of three important steps of the process. While many campaigns

will stop short at alarming information, Sherman (2011) emphasizes the critical importance of social aikido, which transforms negatives into positives and unites people toward a common goal. After all, people in educational cooperative settings perform better, reason at higher levels, and generate more ideas and solutions than people in competitive settings (Johnson & Johnson, 1989). Sherman also calls for the creation of a constructive program that puts forth “a better alternative and vision for the future” (Sherman, 2011, p. 341). Sherman’s emphasis is focused on attacking the problem, not the people, transforming anger into love, changing a battle into a win-win opportunity, leveraging power instead of fighting power, and working cooperatively instead of in a competition.

The second distinction that makes Transformative Action more effective is that exposing injustice is about creating transparency and accountability through nonviolent strategies (Sherman, 2011). Immoral or illegal acts are brought out of secrecy so they can be corrected, not so that anyone can be demonized, humiliated, or treated as an enemy. The use of negativity here is strategic and it functions as “appropriate negativity,” that is “time-limited and soluble feedback connected to specific circumstances” (Fredrickson & Losado, 2005, p. 685). This type of negativity is emotionally manageable, allowing for solutions to be processed and implemented. Conversely, more intense levels of negativity can paralyze or dominate affect, causing a failure to respond.

Negativity or negative affect can be particularly harmful to well-being when it occurs in greater than a 1:3 ratio with positive affect (Fredrickson & Losado, 2005). High negativity ratios can cause us to languish rather than flourish (Fredrickson, 2009). Though negativity at times can help us to think critically, it also tends to narrow our focus and reduce our problem solving skills. In contrast, positive emotions broaden our perspective and awareness while building upon our strengths, allowing us to be resilient in the face of negative information. They propel us in an upward spiral while enhancing the tools we have to handle challenging

situations. As Carter (2009) argues, positive emotions can inspire environmentally responsible behaviors. For example, positive emotions can expand and deepen our awareness of our connection to the larger systems of life around us, broaden our vision and problem solving abilities to allow us to creatively and effectively devise solutions for a more sustainable life, and connect us with what is most important in our lives. Therefore, it is crucially important that environmental organizations focus more strongly on Sherman's (2011) last two steps by cultivating cooperative relationships and creating space for the development of creative, shared visions of a positive future. Even more than exposing the issues, the environmental movement can show what is possible, highlighting the kind of world we want to live in. Positive psychology can offer strategies and support for transforming the negative into feelings of hope, empowerment, and fulfillment.

Positive Psychology

There is a promising field of research that has gained much ground on studying those qualities that make life most worth living. Termed "positive psychology," it complements existing research on mental illness, deficiencies, relationship conflict, etc., and specifically seeks to explore what constitutes human flourishing, such as mental thriving, strengths, high-quality relationships, positive work environments, and more (Seligman, 2011). It asks not what we want less of in life, but what we want more of and how to achieve it.

Positive psychology as a formal field of inquiry was founded by psychologists Mihaly Csikszentmihalyi and Martin Seligman (2011), who wanted to discover what factors lead to a flourishing life. Through examining constructs such as positive affect, meaning and purpose, character strengths and virtues, morality, flow and engagement, grit, positive institutions, positive interventions, and positive relationships, to name but a few, positive psychology has blossomed into a comprehensive research network of individual, and to a lesser extent, institutional attributes that make for an optimal life (Csikszentmihalyi, 1990; Duckworth,

Peterson, Matthews, & Kelly, 2007; Fredrickson, 2009; Gable, & Gosnell, 2011; Haidt, 2007; Park, Peterson, & Seligman, 2004; Peterson, 2006).

When Seligman and Csikszentmihalyi laid out their ideas for positive psychology, they focused on its potential to help build the qualities that allow both individuals and communities to flourish (2000). However, in the past decade, much of the research has been on the character strengths and qualities of flourishing individuals. For example, researchers have analyzed several “positive interventions” individuals can pursue to help them enhance their personal well-being (Seligman, Steen, Park, & Peterson, 2005). Defined as, “treatment methods or intentional activities that aim to cultivate positive feelings, behaviors, or cognitions,” positive interventions such as “three blessings” or the “gratitude visit” exist as actions individuals can take to augment their strengths and achieve a higher state of well-being (Sin & Lyubomirsky, p. 468).

Positive psychology also offers wisdom for maximizing the well-being provided by institutions, such as in schools, workplaces, and governments (Peterson, 2006). For example, some schools have begun implementing a vision of promoting well-being in their students through initiatives such as the “Character Report Card,” which allows students to explore their strengths and hone in on those shown to be successful for both academic achievement and personal well-being (Tough, 2011, Sep. 14). In the workplace, research on high quality connections, organizational strength-finding and visioning, making work meaningful, and leadership development, to name but a few, are dominant areas of research (Cooperrider, 2007; Dutton, 2003; Rath, 2009; Wrzesniewski, 2003). Additionally, Diener (2006) has put forth policy recommendations for governments that may be interested in pursuing well-being as a national goal. Some governments are already incorporating well-being into their national policies, such as the country of Bhutan, which has implemented what it calls Gross National Happiness, a related measure of well-being that measures life satisfaction as well as

conservation of resources and other noneconomic factors (Revkin, 2005, Oct. 4). Thus far however, the research on institutions is limited in comparison to research on individuals (Diener, 2009).

Positive psychology has an important mission—understanding and promoting “the enabling conditions for people to flourish” (Seligman, 2011, p. 68). Seligman’s current theory of well-being includes five criteria for a flourishing life: the presence of a high level of positive emotion, engagement, meaning, positive relationships, and positive accomplishment. The acronym for this five-pronged approach is PERMA. Each prong of PERMA can be measured objectively as well as subjectively, allowing for the potential to measure flourishing using rigorous, scientific processes. It is Seligman’s vision that by 2051, 51% of the world’s population will be flourishing (2011).

Taking the definition of “flourish” literally—to “grow or develop in a healthy or vigorous way, especially as the result of a particularly congenial environment” (Flourish, n.d.)—one can infer that the natural world has a role in providing a supportive environment through which humans can thrive. Though Seligman did not have this in mind in his use of the word “flourish,” it is nevertheless possible, and necessary, to step outside the original bounds of his framework to consider the relevant environmental impacts on our ability to achieve holistic, enduring well-being.

The more we take into account our interactions with the natural world as an important area of psychological study, the more likely it will be that by 2051 a significant portion of the population will be flourishing. Studying humans in the context of the natural world will expand our understanding and experience of well-being while sustainably assuring the ability of future generations to do the same. From an examination of the individual to a reflection of our interdependence with the whole of the world, positive psychology has the potential to unmask a complete picture of all it means to be alive and thriving.

Thriving Planet, Thriving Life

Humankind has not woven the web of life. We are but one thread within it. Whatever we do to the web, we do to ourselves. All things are bound together. All things connect. –Chief

Seattle

I was sitting with my legs stretched across the branches of a small, gnarled tree, high above on a steep cliff overlooking the canyons of Utah—a cascade of rich purples, reds, and creamy whites. Though the canyon seemed initially barren, it was teeming with life. Shrubbery grew from the cracks in the floor and lizards clambered across the rocky ground. Insects and birds flittered about. The air had a heavy, tangible feel to it and the sun’s rays warmed my body. As I sat in this tree, with its limbs twisted from years of resilience against the hot sun and harsh winds, it was here that I fell permanently in love with something much larger than I ever felt before. It was here that I got the most peculiar sense of oneness—that my happiness was bound up in the intricate patterns of all the systems of life surrounding me. I felt small, yet a significant piece of a great puzzle.

The experience of interconnectedness led me to wonder how I could help other people to flourish, while also taking care to help the flourishing of this intricate web of life surrounding me. When we perceive a strong relationship between ourselves and nature, or in other words, when we draw a circle representing “self” overlapping with a circle representing “nature,” we are more likely to have stronger environmental and altruistic concerns, see ourselves as an integral part of the environment, have greater perspective-taking ability, and engage in positive environmental behaviors (Schultz, 2001). In addition, feeling a connection with the natural world is correlated with greater subjective well-being. For example, when we feel a sense of belonging and kinship with the natural world, and as though our welfare is related to the welfare of the natural community, we are more likely to experience greater subjective well-being at the same magnitude as more commonly cited variables such as

marriage and education (Mayer & Frantz, 2004). Additionally, as we will explore further, humans have a natural bond with life and life-like processes (Wilson, 1984).

There is good reason, therefore, to consider well-being through a systems perspective, or through “understanding a phenomenon within the context of a larger whole” (Capra, 1996, p. 27). When the field of positive psychology looks merely upon human individuals or human organizations, it fails to recognize some of the most important elements of our sources of well-being: the larger whole through which we derive both our most basic sustenance, as well as deep satisfaction. Positive psychology has an opportunity to help develop “sustainable happiness,” or the sense of individual and community well-being that does not exploit other people, future generations, or the environment (O’Brien, 2008).

As Alan Kazdin (2009) stresses in an article based on his presidential address to the American Psychological Association, "Of course, there are always challenges facing the world, but an urgent one facing humanity now is the degradation of the environment on a global scale. Psychology’s contributions to society have been remarkable already, but there are new opportunities to extend our reach" (p. 1). Kazdin gives an overview of much of the work that has already been done in psychology to support better care of the environment, though he urges the field to do more to help foster behaviors that will lead to a more sustainable environment.

By expanding positive psychology to be more inclusive of our relationship with nature, we support opportunities to increase both human well-being, as well as the well-being of the very planet that supports us.

Systems thinking.

Only in the last moment of human history has the delusion arisen that people can flourish
apart from the rest of the living world. - E. O. Wilson

Particularly in the western world, there is a common tendency to view ourselves as distinct from nature, as if a dichotomy existed between that which is our flesh and the humanmade things surrounding us and that which grows vibrantly, stands strongly, flies swiftly, swims gracefully, roams freely, or otherwise entertains a sense of life and existence with little human control. This dichotomy is an illusion, for nature is a continuously fluid phenomenon that encapsulates the human population. As Buddhist monk Thich Nhat Hanh is quoted as saying, "You carry Mother Earth within you. She is not outside of you... In that kind of relationship you have enough love, strength and awakening in order to change your life" (Confino, 2012). Or, as another example, "we are, through our intelligence and communication, the nervous system of the planet. Through us Gaia [the Earth] has seen herself from space and begins to know her place in the universe" (Lovelock, 2006, p. xiv).

From this perspective, nature is already part of who we are, although we have varying degrees of recognizing this relationship (Schultz, 2001). Often, we think of ourselves as having a dichotomous relationship with nature. It is common to draw boundaries between an "us" and a "them" (Tajfel, 1982). We often say, "There are two kinds of people in the world" or, "Which side are you on?", highlighting the tendency to think in binary terms. The creation of in-groups verse out-groups can create a sense of belongingness (Helliwell, 2012), yet at other times they can be problematic. Contentions across boundaries can arise from a breakdown of communication, trust, and understanding. In the example at hand, the trouble with drawing a boundary between "human" and "nature" is that we fail to grasp a complete understanding of the whole picture. When we attempt to explain complex phenomena by isolating out certain pieces, we miss all that it means to be human.

In the field of psychology, we attempt to understand behavior by isolating and studying subtle variations among individuals and families, teams and organizations, communities and environment. In fact, the original intention of positive psychology was to

provide empirical research that supports the thriving of individuals and institutions, distinguishing them as similar, though separate, lines of research (Seligman & Csikszentmihalyi, 2000). Research on individuals may focus on individual strengths, resiliency, psychotherapy, states of flow, and other qualities characteristic of a single individual, whereas research on institutions may examine employee engagement, strengths of leadership teams, institutional visioning and goal setting, and other qualities characteristic of a group, particularly in the work environment (Peterson, 2006). Both divisions do an adequate job of supplying information about the human condition, yet both also lose information about the human condition as a grander whole.

Other social scientists have emphasized a more complex systems approach to studying human nature and development. For example, in Bronfenbrenner's (1979) bioecological theory of human development, the largest system theorized to affect human development is the chronosystem. This system includes social trends and patterns over time, such as divorce rates or the expansion of gender equality. Bronfenbreener's model gives credit to the importance of institutions such as schools and the workplace, as well as social and political phenomena individuals have little direct control over. While comprehensive, it excludes our relationships across species and with the natural world, ignoring a greater system of influence to the human experience.

Prilleltensky (2005) is another psychologist using a more holistic synthesis of the many factors affecting the optimal development of an individual, as well as addressing the importance of societal-level well-being. He distinguishes between three overlapping, though highly independent sites of well-being: personal, relational, and collective. Expressions of well-being in these sites may include an individuals' sense of personal control, the existence of enduring friendships, and community support for the poor, respectively. Prilleltensky argues it is important to divide influences of well-being into categories because it allows us to

systematically create a wide variety of intervention strategies. For example, we might work to increase empowerment at the personal level, provide conflict resolution training at the relational level, and develop social justice movements at the community level. In this model, environmental issues such as air or water pollution can be identified at the collective site of well-being, though the depth, breadth, and significance of the human connection with the planet is severely muted.

While models such as these often claim to be “ecological,” a word meaning “relating to or concerned with the relation of living organisms to one another and to their physical surroundings” (Ecological, n.d.), the irony is that they pay very little attention to any other organism but the human. Ecology is a branch of study that explores relations across species and examines the relationships of communities of organisms with the natural world and environmental processes. Though descriptions of the ecological nature of well-being may occasionally mention local pollution issues (e.g. Prillettensky, 2005), in mainstream psychology there rarely exists a discussion of anything that delves deeper into cross-species relations or human relationships with the natural world. In this way, psychology has been accused of being too anthropocentric, or tending to evaluate reality exclusively through human-centered values and by regarding humans as the most important entity on Earth, prescribing only instrumental value to other lifeforms (Capra, 1996). Psychology falls short of capturing the whole view of all the properties affecting the human psyche, particularly the “web of life” that surrounds us (Capra, 1996).

According to Capra (1996), the major problems of our time, such as mass extinction, poverty, and overpopulation, are systemic and interconnected. He goes on to say that in order for solutions to unfold, we must shift our thinking and values in a holistic, and truly ecological way. In other words, he advises expanding toward a more global and inclusive understanding of “us.” Capra is part of a growing network of scientists interested in deep

ecology, a philosophical field of study that attends to the idea that all beings have an interest in flourishing (Drengson, & Inoue, 1995). Deep ecology examines systems-based worldviews, values, sociocultural institutions, collective actions, and personal lifestyles. This research reveals the joy, wonder, and beauty of nature, as well as its connections to spiritual, emotional, and cultural development (Naess, & Haukeland, 2008). Additionally, it provides a greater understanding of the ways in which humanity is embedded in and dependent upon other species and the cyclical processes of nature in order to thrive (Capra, 1996). Deep ecology explores a view of the world as an integrated whole, rather than a collection of independent parts. In practice, this is marked by leading a happy life, while altruistically supporting the optimal functioning of other forms of life and ensuring the well-being of future generations.

Altruism has been discovered to be an important factor in group selection. Group selection is the idea that the fitness of a group as a whole can be increased at the expense of the individual (Wilson & Wilson, 2007). An example of this is an animal that puts out a warning call to alert the group to an impending danger, at the risk of giving away its own location. Groups with individuals that display altruistic tendencies for group benefit can increase their odds of survival by outperforming groups whose individuals do not display altruistic tendencies for group benefit. This idea stems from a concept called multilevel selection theory, or the notion that evolution takes places at an individual as well as a group level. As inherently social animals, humans have developed many of these cooperative, empathetic, and group-oriented traits. As Haidt (2012) would argue, we have the capability to activate a “hive switch,” losing some of our self-awareness to feel bound to a larger, cohesive group. When this switch is activated, the group seems to act as an organism all its own.

Unfortunately, these positive traits have also lead to some negative consequences. It is our inclination toward supporting our own species at the exclusion of others that led humans to be a dominant force on the planet. Our behaviors result in the demise of innumerable plant and animal species (potentially half will be extinct or in severe danger of extinction by the end of the century), and the destruction of tropical forests, grasslands, and other habitats (Wilson, 2012). In light of these unintended outcomes, we might re-orientate our conceptions of in-group versus out-group. As we make decisions, I suggest we consider the impacts on a broader, systems-based level. We might expand our conceptions of in-group versus out-group to be more inclusive to other species and their struggle to flourish. As Haidt (2012) also indicates, the hive switch can be triggered by nature, allowing us to feel part of the whole of the Earth. We might then recognize, as some have, that species other than our own have innate rights (e.g. Devall & Sessions, 1985; Singer, 2011; Wilson, 1993).

By expanding our study of well-being to be more inclusive of the interactions we have with other species, we may also begin to expand our “moral circle” (Singer, 2002). It has been argued that the interests of other species should be considered equal to the interests of our own species. Singer defines those who give greater weight to the interests of their own species over others as a “speciesist.” He proposes an environmental ethic in which we consider our choices in terms of the impact they have on all sentient creatures and future generations (Singer, 2011). This environmental ethic also emphasizes an appreciation of wild spaces and suggests we judge “success” not in terms of external material gains, but in terms of one’s inner abilities and sense of personal fulfillment and satisfaction. Through these ethics, he argues, one might re-use materials, consume fewer resources, birth fewer children to limit population growth, and re-assess what is really necessary for a meaningful life that is simultaneously in harmony with our environment. He describes:

The emphasis on frugality and a simple life does not mean that an environmental ethic frowns on pleasure, but that the pleasures it values do not come from conspicuous consumption. They come, instead, from loving relationships; from being close to children and friends; from conversations; from sports and recreations that are in harmony with our environment instead of harmful to it; from food that is not based on the exploitation of sentient creatures and does not cost the earth; from creative activity and work of all kinds; and (with due care so as not to ruin precisely what is valued) from appreciating the unspoilt places in the world in which we live. (Singer, 2011, p. 255)

Though Singer's proposal extends only to living creatures, other philosophers have argued that all organisms and entities, such as watersheds and ecosystems, have intrinsic worth and a right to unfold to their higher potentials as part of the interrelated whole in which we all exist (Devall & Sessions, 1985). The ultimate interrelated whole is the Earth itself. As Lovelock (1990; 2006) posits in his Gaia theory, the planet is a superorganism unto itself, or a social unit consisting of many organisms that has developed adaptive properties similar to that of a single organism (Wilson & Wilson, 2007). According to his theory, all organisms on the earth are closely integrated and collectively form a single, self-regulating, complex system that maintains conditions such as temperature and atmospheric conditions necessary for continued life (Lovelock, 1990). From this perspective, the ways in which humans behave affect the globe as a whole, and conversely, the conditions of the globe affect humans.

With this view, we can begin to think of the Earth as a system of interconnections, relationships, and in a state of constant change, while keeping in mind how to support the system for future generations and non-human life (Capra, 1996). We may also shift our thinking, from reductionist and linear thoughts to those that are synthesizing, holistic, and nonlinear. We may shift our values from competition and domination to cooperation and

partnership. We may shift from a view of life as a hierarchy, to a view of life as a network, or as networks nesting within and alongside other networks. We may also shift from a narrow view of well-being, to a wider view of well-being that examines more of the networks that help us thrive.

These shifts reflect a systems approach, in which an examination of the whole unveils essential properties that arise from the relationships between parts (Capra, 1996). When we establish the nature of these broader relationships, we deshroud important properties that are missed when the system is dissected. When we examine phenomena in the context of the larger whole, we come to a much richer understanding of that phenomena.

The ultimate aim of positive psychology will be to study the components of the system, while also keeping the complexity of the whole in view. When we work to improve human well-being in isolation of the effects our actions have on other system components, we may be inadvertently affecting our long-term ability to sustain our well-being. As climate instability intensifies, and with overfishing, habitat loss, species extinction, deforestation, pollution, and overextending our water tables, we are creating a situation in which we and other lifeforms will not be able to flourish. As a result, future generations could inherit an earth that may not be as naturally rich as the one we have today. As we will later discuss, the natural world is an important contributor to enhancing well-being.

Despite the vast knowledge positive psychology has unearthed, the field has yet to capture what it means to thrive. From an isolated examination of the human experience, to an expanded view of our existence within a vast web of life, positive psychology has the potential to unveil the whole picture of all it means to be alive on this planet. I propose a new systems-based model of positive psychology. It examines well-being as it is derived from individual to institutional sources, as well as from human-centered to nature-inclusive

sources. Through such a lens, positive psychology will ask a new question: What sources of well-being will allow our species to flourish now and for generations to come?

Nature-inclusiveness.

The earth I tread on is not a dead, inert mass. It is a body—has a spirit—is organic—and fluid to the influence of its spirit—and to whatever particle of that spirit is in me. -Henry

David Thoreau

Positive psychology tends to gravitate toward a focus of the conditions of being human as they are unique to our species. Human-centeredness here refers to a study of the human in isolation of broader ecological relationships. It is the focus of psychology and development, human-to-human relationships, manifestations of culture and society, and the unique affairs of the human condition. Human-centeredness would not consider our relationship with our natural environment, resources necessary for basic sustenance and survival, inter-species competition and cooperation, and the relationship between humans and ecological systems.

Nature-inclusive, on the other hand, refers to the human position within a larger system of interconnected species and planetary processes. Comparatively referred to as positive ecology, ecocentrism, deep ecology, and ecopsychology, this area is the study of how our humanness has and continues to be adapted and influenced by the natural world around us (Leopold, 1949; Næss, 1973; Roszak, 1992; Schmidt, 2005). This field extends our understanding of what it means to be human by paying homage to the broader environmental processes in which we are integrally woven.

As an example, according to the biophilia hypothesis, humans have an innate emotionally-based bond with other living organisms (Wilson, 1984). Wilson posits that much of our psychology stems from immersion in natural environments throughout our evolution. His theory is biologically-based. While recognizing the affective quality that

nature has on our spirit, Wilson argues that this affective quality arose through the acquisition of learning rules about our natural environment that made survival more likely. It also facilitated cultural evolution as these biologically-based affinities and aversions were translated into language, myths, art, and religion with nature and animal motifs. Research supports the assertions that association with life and lifelike processes is part of our evolution, assisting in genetic fitness, giving us meaning and fulfillment, and encouraging care and conservation for the rich diversity of life (Kellert & Wilson, 1993).

In some sense, the argument for biophilia is intuitive. Humans have spent more than 99% of their evolutionary history in hunter-gatherer bands, having intimate knowledge of and interaction with other animal and plant species (Wilson, 1993). It is only recently with the expanse of agriculture and technology that humans have begun to decrease the felt, direct connections between humans and other forms of life, no longer maintaining a deep and practical knowledge of relationships with other organisms. When humans are surrounded by biodiversity, Wilson argues the greatest benefits are not the extrinsic value other species have for producing medicine, agriculture, energy, building materials, and the like, but rather the value brought to the human spirit through aesthetics and spiritual connection. Additionally, Wilson contends there may exist a cross-species “moral code” that confers the right to exist upon all the Earth’s species.

There is research to support Wilson’s biophilia hypothesis. For example, people have a preference for natural environments over humanmade environments and for humanmade environments with natural features, such as plants or waterscapes (Kaplan & Kaplan, 1989). Additionally, people tend to prefer particular types of natural settings, especially a setting resembling that of a savannah, which is our earliest evolutionary environment (for a review see Kahn, 1999). As we will later explore, our affiliation with nature also has a number of

benefits to health, cognition, well-being, and community. Our interaction with nature can lead to many positive outcomes.

Kellert (2003) argues that our connection to nature serves nine different purposes, or functions (see Table 1). Among these functions are naturalistic, aesthetic, humanistic, symbolic, and moralistic valuations, which are all intrinsically and strongly emotionally-based. They serve to strengthen our capacity for group bonding and cooperation, curiosity and development, inspiration and peace, meaning in life, and communication. Though today we spend less time outdoors than ever before, we can therefore benefit especially from growth in these areas. We can be more mindful of our connections to nature and conscientious in seeking out experiences in parks or wild spaces. On the importance of a conservation ethic, Kellert argues that “nature’s diversity and healthy functioning are worthy of maintenance because they represent the best chance for people to experience a satisfying and meaningful existence. The pursuit of the ‘good life’ is through our broadest valuational experience of nature” (p. 60).

Table 1

Kellert’s (2003) Typology of Biophilia Values

Term	Definition	Function
<i>Utilitarian</i>	Practical and material exploitation of nature	Physical sustenance/security
<i>Naturalistic</i>	Satisfaction from direct experience/contact with nature	Curiosity, outdoor skills, mental/physical development
<i>Ecologistic-Scientific</i>	Systematic study of structure, function and relationship in nature	Knowledge, understanding, observational skills

<i>Aesthetic</i>	Physical appeal and beauty of nature	Inspiration, harmony, peace, security
<i>Symbolic</i>	Use of nature for metaphorical expression, language, expressive thought	Communication, mental development
<i>Humanistic</i>	Strong affection, emotional attachment, 'love' for nature	Group bonding, sharing, cooperation, companionship
<i>Moralistic</i>	Strong affinity, spiritual reverence, ethical concern for nature	Order and meaning in life, kinship and affiliational ties
<i>Dominionistic</i>	Mastery, physical control, dominance of nature	Mechanical skills, physical prowess, ability to subdue
<i>Negativistic</i>	Fear, aversion, alienation from nature	Security, protection, safety

Despite the positive functions identified in this classification, it is increasingly difficult to immerse ourselves in nature with the expansion of cities and urban areas. In the past, humans had a much more direct connection with the food they ate, the natural materials used for tools and buildings, and sources of water for drinking, washing, and preparing food. While tribal and rural areas retain much of this direct connection to life-giving wild spaces, most people live with an increasing number of human links separating them from the natural resources they consume. For example, rather than eating an apple picked off a tree, people typically go to the supermarket to purchase an apple, which was placed on display by a store employee, ordered by the store's produce manager, shipped by a trucker, placed in the truck by a farm hand, and picked from the tree by yet another farm hand. In this process, there are five human links between consumers and their experience of eating the apple. In fact, the average plate of food has travelled 1,500 miles to get to the dinner table in front of us (Pirog, Van Pelt, Enshayan, & Cook, 2001).

With all these degrees of separation inhibiting people from a direct interaction with the natural world, it is no surprise that we feel a dichotomy between ourselves as humans and nature. It also explains the ease with which the natural world can be ignored in psychological literature. Nature-deficiency disorder is the idea that behavioral and mental problems arise from too little contact with natural spaces (Louv, 2008). It follows that connection with nature is crucial for optimal development. If we can reduce the number of links separating ourselves and the natural resources we consume, and if we can increase the amount of contact we have with wild spaces, we will gain a better experiential understanding of well-being as it is embodied within an interdependent, ecological context. Indeed, research demonstrates that the more time one spends in nature, the more well-being increases (Brown & Kasser, 2005; Mayer & Frantz, 2004; Nisbett, Zelenski, & Murphy, 2009).

A psychological approach that is nature-inclusive would consider such questions as, How do individuals derive well-being from being part of a larger system of interconnected species and environmental processes? Do especially nature-inclusive individuals differ in levels of well-being than especially human-centered individuals? How is the resiliency of human-centered versus nature-inclusive institutions affected by different crises? How do institutions advance towards a future that assures the well-being of generations to come?

There are already several scales developed to determine the strength of our relationship and connection with nature (e.g. Mayer & Frantz, 2004; Nisbet, Zelenski, & Murphy, 2008; Schultz, 2001). Additionally, there are global scales of societal well-being that include measures of environmental well-being, such as the Index of Sustainable Economic Welfare, the Genuine Progress Indicator, the Green National Product, Gross National Happiness, and the Happy Planet Index (for review, see Heinberg, 2011). If connection with nature is something we want to encourage for a sustainable society, psychological interventions can be measured in part by what degree this connection is

enhanced or by what degree ecological behaviors increase as a secondary effect.

Additionally, connection with nature can be included with leading theories on what constitutes a good life.

PERMAculture.

Look deep into nature, and then you will understand everything better. –Albert Einstein

The PERMA theory is a leading theory of well-being. Originated by Martin Seligman (2011), it stands for positive emotion, engagement, meaning, positive relationships, and positive accomplishment. PERMA is a research-backed and useful way of understanding the ways in which an individual thrives, stressing the importance of healthy relationships, pathways to achieving flow, the development of connection to something larger than the self, and other qualities that make for an optimal life. As a measurement tool, it has the potential to quantify the extent to which an individual is flourishing. Indeed, using a similar model to PERMA, researchers in Europe were able to measure the percentage of flourishing citizens in 23 countries (Huppert & So, 2009).

While PERMA is a useful way to examine well-being at the level of the individual, it does not work as well in understanding the cultural, social, political, and ecological network in which the individual is embedded. It does not measure aspects of community vitality, such as food and water security, equality, access to quality education and healthcare, and a thriving ecological network. Measuring the percentage of flourishing individuals alone will provide a lot of information about a particular aspect of life, but much will be lost unless we study the whole system and the relationships woven therein.

As UN Secretary-General Ban Ki-moon has said, following a high-level meeting on economics and well-being, “Social, economic and environmental well-being are indivisible. Together they define gross global happiness” (Dept. of Public Information, 2012, April 2). In particular, the Secretary-General was urging for an economy that measured societal well-

being beyond mere gross domestic product, or GDP, and for all sectors of society to push for sustainable development, or a holistic strategy that works to “connect the dots” between global issues such as poverty and empowerment of women.

In light of these calls, how can positive psychology broaden its scope to measure well-being on a systems-based level? One idea is to redefine flourishing as the high presence of human well-being and the low presence of environmental impact (e.g. environmental efficiency of well-being, Dietz, Rosa, & York, 2009). In doing so we can achieve two important and interconnected initiatives: a measurement of human well-being and a measurement of the healthy functioning of the ecosystem in which we make our livelihood. We may even creatively call this measurement PERMAculture.

The original term permaculture was coined in the 1970’s by an Australian ecologist named Bill Mollison (1997). It refers to the development of self-sufficient and sustainable agricultural systems. Today the term is more loosely used to refer to whole communities and the self-sufficiency of their food, energy, building, and even social needs. Though the term originally meant “permanent agriculture,” it was later expanded to mean “permanent culture,” or a culture that can take care of the well-being of its people while tending to the well-being of the Earth (Whitefield, 2005). Permaculture is about synergy between organisms, design elements that achieve the highest benefits for the system as a whole, and positive yields from minimal effort that ensure sustainability over time.

The term permaculture doesn’t quite fit the description of a thriving people and a thriving planet, but it comes very close. To incorporate a positive psychology mission, we might define PERMAculture as: the study and measurement of flourishing life. In this definition the dichotomy of people and planet is reduced, and “life” refers to the network of organisms which strive to make a productive living on this planet. To that end, we can aid societies in maximizing the welfare of its human and non-human inhabitants while

undergoing sustainable development initiatives that allow for the conservation and experience of wild spaces, ensuring the long-term well-being of future generations.

The original components of the acronym PERMA may also expand to incorporate a deeper understanding of the connection people have with the natural world. For example, in addition to a study of positive emotions generally, special research may highlight emotions such as awe or gratitude as they facilitate connection to outdoor spaces (Carter, 2009). Research might also understand the engagement that comes from spending time outdoors, the extent to which we feel a relationship with nature, the meaning this brings to life, and the accomplishments we make as individuals or as a society as we continue to enhance the flourishing of life. The PERMA qualities of well-being can be amply found and promoted in the relationship between people and nature.

While PERMAculture is in its infancy and has its own limitations, it is a useful construct to bring into conversations amongst environmental scientists and positive psychologists. Many environmental scientists have put forth ways of measuring a healthy and optimal environment, and many psychologists have suggested ways of measuring a healthy and optimal human populace. Both groups have put forth ambitious and worthy goals for 2051. By reconciling these and unifying them as one objective, we can begin striving toward a world that is truly flourishing—a world in which the needs of humanity can be fulfilled with little to no negative impact on the needs of other species. Such an approach need not be sacrificial. In fact, the opposite is true. By being nature-inclusive and supporting PERMAculture, we will discover there are even more positive consequences of a close connection with nature than we currently know. What follows in this paper is a brief overview of the myriad ways that connectedness with nature supports human well-being, physical and mental health, and the creation of positive communities.

The Positive Influences of Nature

One link between nature and well-being is clear: the more time spent in natural surroundings, the higher one's well-being (Brown & Kasser, 2005; Howell, Dopko, Passmore, & Buro, 2011; Mayer & Frantz, 2004; Nisbet, Zelenski, & Murphy, 2011). A variety of studies have shown that time spent in nature boosts cognitive and physical health, increases well-being, and allows an opportunity to connect more deeply with one's community. What follows is a sampling of the findings from this rich field of inquiry.

Well-being. Interestingly, life satisfaction, positive affect, and subjective well-being are positively correlated with ecologically responsible behaviors (ERBs), such as using reusable bags, turning off lights not in use, and other diet, transportation, and household choices with low ecological consequences (Brown & Kasser, 2005). These findings are mediated by possession of intrinsic values. Intrinsic values are those that orient a person towards personal growth, relationships, and community involvement (Kasser & Ryan, 1996). They differ from materialistic or extrinsic values, which orient a person towards image, popularity, financial gain, and other forms of acquisition outside the self.

Research shows that materialistic values are detrimental to well-being and quality of life, reducing life satisfaction in multiple domains including satisfaction with family, friends, health, and even finances and work (Roberts & Clement, 2007). In contrast, an intrinsic value orientation is related to higher levels of subjective well-being, as well as ERBs (Brown & Kasser, 2005). When intrinsic values are experimentally activated, Americans also shift toward the opinion that smaller ecological footprints are important (Sheldon, Nichols, & Kasser, 2011).

When immersed in nature, intrinsic motivations increase as feelings of autonomy and nature-relatedness increase. As a result, the desire to engage in ecological behavior is further enhanced (De Young, 2000; Osbaldiston & Sheldon, 2003; Weinstein, Przybylski, & Ryan, 2009). Other correlations with intrinsically motivated, ecological behavior involve

satisfaction with: (1) problem solving, (2) practicing frugality, and (3) participating in community activities that make a difference (De Young, 2000).

Those who engage in ecological behavior also tend to have a greater relationship with the natural world, or “nature-relatedness” (Nisbet, Zelenski, & Murphy, 2009). This relationship includes cognitions and beliefs, such as feeling an identification or oneness with the natural world, emotions such as mindfulness and fascination, and meaningful experiences that take place in nature. People who score high on a nature-relatedness scale have a sense of interconnectedness with all living things, a comfort with nature and a desire to be in natural surroundings. They also have nature-related worldviews, such as pro-environmental attitudes. Nature-relatedness is correlated with purpose in life, vitality, positive affect, autonomy, and personal growth. This connection is also hypothesized to be bi-directional, in which those with high well-being are likely to have high nature-relatedness and those who immerse themselves in nature find their well-being increases as a result. Those who spend a lot of time in nature also tend to have more positive emotions at work and at home (Nisbet, Zelenski, & Murphy, 2011).

Dispositional mindfulness is also shown to be related to both subjective well-being and ERBs. Dispositional mindfulness is a state of consciousness that actively attends to and is accurately aware of internal states and external realities (Brown & Ryan, 2005). In other research, actively increasing mindfulness has led to decreases in financial desire discrepancies, which is the gap between how much wealth one has compared to how much one desires (Kasser, Brown, Ryan, Linley, & Orzeck, 2009). This decrease in financial desire discrepancy partially mediates the correlation between mindfulness and subjective well-being. To put it another way, this finding implies that increasing mindfulness and the feeling of “wanting what one has” can lead to increases in well-being.

Having a dominant life goal of protecting the environment, or what might be considered an environmentalist, is also correlated with well-being (Eigner, 2001). Several explanations for this connection have been theorized, such as in the following. Nature-protecting activities produce an internal locus of control, intrinsic motivation and meaningfulness. Engagement in natural settings produces positive experiences. Involvement with environmental groups provides social contacts. Extensive interviews with environmentalists found that they tend to be fascinated by nature, feel joy and decreased stress from nature, feel effective and satisfied with their lives, receive acknowledgement and admiration from others, and build social connections.

These findings are consistent with a study that found activists are “flourishing” at a rate more than 150% greater than non-activists, and tend to have higher levels of autonomy, competence, and positive relations with others (Klar & Kasser, 2009). Additionally, activists are higher in positive affect, personal growth, purpose in life, social contribution, and other factors related to flourishing. In this study, flourishing was defined as having a high level of either life satisfaction or positive affect, as well as high levels in scales measuring psychological and social well-being (Keyes, 2002). In a national data pool of more than 3,000 adults aged 25-74 (unrelated to environmental activism), 17.2% fit this category of flourishing, 56.6% had moderate mental health, and 26.2% were either languishing, having a major depressive episode, or both. To contrast this with the activist study, 28% of activists were found to be flourishing, whereas only 18% of the general population were flourishing (Klar & Kasser, 2009). The researchers additionally found that when individuals were assigned an activist intervention their vitality significantly increased over those who were assigned a more generic intervention.

Studied globally, in an analysis of 58 countries, those with greater natural capital per capita also had higher subjective well-being (Engelbrecht, 2009). Natural capital is the

calculated value of renewable and nonrenewable resources within a country (World Bank, 2006). Nonrenewable resources include energy as well as metal and mineral resources. Renewable resources include forests, crops, pastures, and protected areas. The positive relationship between natural capital and well-being remained when alternative well-being measurements were used, such as life satisfaction, happiness, and the combined life satisfaction and happiness index (Engelbrecht, 2009). With this finding arises the implication that subjective well-being may be an important outcome to consider with sustainable development initiatives. Additionally, the natural environment may provide intangible benefits important to the quality of our lives, not observable to our available measurements.

Overall, the research shows that happier people are often those with more ecological lifestyles and who actively engage in efforts to be more environmentally responsible. Interestingly, living in an area with more natural capital may also have an influence on well-being. As we will later explore, living near areas with denser vegetation is also positively correlated with physical health. This research shows that strengthening a relationship with the natural world can be a powerful tool for increasing well-being, boosting it at a magnitude comparable to more commonly cited variables such as marriage and education (Mayer & Frantz, 2004). However, simply being in nature, even for short bursts of time, has positive influences as well.

Cognitive health. The natural environment can mitigate stress and restore attention, facilitating information processing (Kaplan, 1995). Effortful attention is required in much of our daily lives, from preventing distraction at the office to honing in on a meditative practice. Often this effortful attention becomes fatigued over time, and the temptation to search the web, allow the mind to wander, or give in to an unwanted desire becomes great (Baumeister, Gailliot, DeWall, & Oaten, 2006). Strengthening our ability to use effortful attention allows

us to be better problem solvers, control unwanted impulses, engage in thoughtful planning, and enhance overall effectiveness.

Kaplan (1995) states that when our ability to engage in effortful attention becomes fatigued, we need to restore our focus through activities such as sleep, taking physical and mental breaks, or placing oneself in an environment that provides rich and engaging stimuli that one can place attention on with little effort. Nature provides engaging visual stimuli to effortlessly attend to, and a physical and mental break therein. This opportunity for a physical and mental break leaves people feeling restored, less stressed, and more capable of effortful attention. It may be no surprise then that simply having a view of nature from an office window significantly reduces the desire to quit and improves stress levels (Leath, Pyrga, Beale, & Lawrence, 1998).

Beyond increases in attention, time spent in nature also increases our ability to reflect on a life problem (Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009). In one study, research participants were bussed to either an urban downtown or a nature preserve. Both groups were asked to think of a life problem with loose ends in which they were to tie up. At the end of a twenty-minute walk and reflection in the two areas, those who spent time in the nature preserve felt more prepared to wrap up the loose ends of their problem than those spending time in the urban setting.

Further research shows that a view of nature outside the home accounts for 20% of the variance in self-control and concentration scores for girls, as compared to girls in similar, randomly assigned housing units (Taylor, Kuo, & Sullivan, 2002). This effect did not hold for boys, perhaps because they tend to spend more time outdoors. Additionally, exposure to nature improves the concentration of children diagnosed with attention deficit hyperactivity disorder, or ADHD (Taylor & Kuo, 2009), may decrease road rage in adults (Cackowski &

Nassar, 2003), and improves overall executive functioning and self-regulation (Kaplan & Berman, 2010).

Other positive influences of nature have been proposed, such as cultivating a sense of purpose, building connections with others, and assisting in optimal child development, though the research to date on these links is minimal (Health Council of the Netherlands, 2004).

Physical health. Nature has beneficial effects for promoting physical health. It has long been observed that having a hospital room with a window that looks out to a natural scene can promote faster recovery after surgery (Ulrich, 1984). Both taking a walk through nature and sitting in a room with window views of trees can reduce stress, increase positive affect, and decrease feelings of anger (Hartig, Evans, Jamner, Davis, & Gärling, 2003). Walks in urban environments or urban window views do the opposite. In fact, it only takes a 15-minute walk through the forest for levels of cortisol, pulse rate, blood pressure, and sympathetic nerve activity to lower, while parasympathetic nerve activity increases (Park, Tsunetsugu, Kasetani, Kagawa, & Miyazaki, 2010). These outcomes promote rest and relaxation.

In Japan, these forest walks are called Shinrin-yoku, or forest bathing, and have been studied for their positive physiological benefits. Though research is still preliminary, trips to the forest may increase what's called Natural Killer activity (NK), or cells that are reported to release proteins that destroy tumors and virus-infected cells (Li, 2010). The suggested cause for these results are the breathing in of phytoncides, which are antimicrobial oils released from trees that prevent rotting and detract some insects and animals.

Simply living near natural settings also has positive correlates with health. Controlling for sociodemographic factors, proximity to natural spaces was associated with greater perceived general health in a study done on more than 250,000 individuals in the

Netherlands (Maas, Verheij, Groeneween, de Vries, & Spreeuwenberg, 2006). In areas where 90% of the surrounding home environment was green space, only 10.2% of residents felt unhealthy, compared with 15.5% of residents in areas where only 10% of the surrounding home environment was green space. These findings were gathered after controlling for urbanity, sociodemographic, and socioeconomic factors. This positive effect seems to be most prominent amongst lower socioeconomic groups, elderly, youth, and those whose highest education level is high school.

Living near natural spaces is also correlated with longevity (Takano, Nakamura, & Watanabe, 2002). After controlling for age, sex, marital status, and socioeconomic status, researchers of a longitudinal study of more than 3,000 adults, 73 years and older, found that those who lived in close proximity to parks and tree lined streets, and those who had enough space available to take a stroll, had a higher chance of longevity after a five-year follow-up than those who did not. Living near parks and tree lined streets increased survival rates from 66.2% to 74.2%. Those with little space for a stroll near their residence had a survival rate of 55.7% compared to 73.8% of those who had enough. For women, but not for men, good communication with neighbors and a desire to stay in their community were also related to longevity. For men, but not for women, five hours or more of daily summer sunlight and being near little noise pollution increased longevity.

Nature also has a strong effect on vitality levels (for a literature review, see Ryan et al., 2010). Vitality is a feeling of mental and physical energy. It is associated with the sensation of aliveness, vigor, positive affect, and calm energy, as well as positive health and behavioral outcomes. Vitality increases for people engaged in natural surroundings, a finding that is prominent even when controlling for effects of physical activity, social activity, and the experience of being outdoors (being outdoors in any kind of setting boosts vitality, a natural outdoor setting boosts it even higher) (Ryan et al, 2010). The act of being surrounded

by nature helps one’s mental and physical energy levels rise even higher. The sensation of higher energy levels are associated with fewer symptom reporting, better physical health, self-motivation, self-actualization, self-esteem, and well-being (Ryan & Frederick, 1997).

Exercise in natural environments also has positive influences over exercising indoors (Coon et al.,2011). When these two settings are compared, outdoor exercise offers added benefits of decreased negativity, higher levels of engagement and revitalization, deeper enjoyment, and a stronger commitment to exercise again.

The list of physical influences of nature goes on, as Table 2 indicates. Due to these numerous benefits, there are several types of nature-based therapy that have been established, particularly by those in the field of “ecopsychology” (Maller, Townsend, Pryor, Brown, & St. Leger, 2005). As this field advances, greater empirical evidence will unfold to further establish and define these links.

Table 2

Maller et al. (2005) Summary of Evidence Supporting the Assertion that Contact with Nature Promotes Health and Well-Being

What the Research Demonstrates With Certainty				
Assertion	Evidence			Key reference/s
	A	T	E	
There are some known beneficial physiological effects that occur when humans encounter, observe or otherwise positively interact with animals, plants, landscapes or wilderness	✓	✓	✓	(Friedmann et al., 1983a; Friedmann et al., 1983b; Parsons, 1991; Ulrich, et al., 1991b; Rohde and Kendle, 1994; Beck and Katcher, 1996; Frumkin, 2001)
Natural environments foster recovery from mental fatigue and are restorative	✓	✓	✓	(Furnass, 1979; Kaplan and Kaplan, 1989; Kaplan and Kaplan, 1990; Hartig et al., 1991; Kaplan, 1995)
There are established methods of nature-based therapy (including wilderness, horticultural and animal-assisted therapy among	✓	✓	✓	(Levinson, 1969; Katcher and Beck, 1983; Beck et al., 1986; Lewis, 1996; Crisp and O’Donnell, 1998; Russell et al., 1999; Fawcett and

others) that have success healing patients who previously had not responded to treatment				Gullone, 2001; Pryor, 2003)
When given a choice people prefer natural environments (particularly those with water features, large old trees, intact vegetation or minimal human influence) to urban ones, regardless of nationality or culture	✓	✓	✓	(Parsons, 1991; Newell, 1997; Herzog et al., 2000)
The majority of places that people consider favorite or restorative are natural places, and being in these places is recuperative	✓	✓	✓	(Kaplan and Kaplan, 1989 Rohde and Kendle, 1994; Korpela and Hartig, 1996; Herzog et al., 1997; Newell, 1997; Herzog et al., 2000)
People have a more positive outlook on life and higher life satisfaction when in proximity to nature (particularly in urban areas)	✓	✓	✓	(Kaplan and Kaplan, 1989; Kaplan, 1992a; Lewis, 1996; Leather et al., 1998; Kuo, 2001; Kuo and Sullivan, 2001)
Exposure to natural environments enhances the ability to cope with and recover from stress, cope with subsequent stress and recover from illness and injury	✓	✓	✓	(Ulrich, 1984; Parsons, 1991; Ulrich et al., 1991b)
Observing nature can restore concentration and improve productivity	✓	✓	✓	(Tennessen and Cimprich, 1995; Leather et al., 1998; Taylor et al., 2001)
Having nature in close proximity, or just knowing it exists, is important to people regardless of whether they are regular ‘users’ of it	✓	✓	✓	(Kaplan and Kaplan 1989; Cordell et al., 1998)

Note: A, anecdotal; T, theoretical; E, empirical.

Overall, these findings suggest that frequent trips to natural settings may reduce the likelihood of stress-related and other types of diseases and may even aid in improving mental health. Natural settings boosts health whether one is actively exercising outdoors or merely glancing from a window. The impressive range of effects gives support to the importance of these wild spaces as an integral aspect of human physical and mental well-being. These spaces are also quite conducive to building positive, powerful, sustainable communities.

Community building. Seeking human health and well-being in concert with environmental sustainability is necessary in caring for the health and well-being of whole populations (Maller et al., 2006). With mounting evidence on the beneficial influences of immersion in natural environments, both responsive and preventative public health initiatives can consider contact with nature as a strategy that is easy and affordable for building communities that are safer, more cohesive, and filled with greater numbers of those who are mentally thriving. Furthermore, these strategies can be triple bottom line—people, profit, planet—by enhancing human well-being, encouraging economic development that considers the welfare of future generations, and conserving biodiversity and ecological processes.

The potential simplicity of these initiatives is astonishing. Simply having a view of nature from the window at home has measurable effects on our sense of satisfaction with our neighborhood, as well as our sense of well-being, including feeling at peace and energized, focused and competent (Kaplan, 2001). Walking along tree-lined paths does more for well-being than walking indoors, though people tend to underestimate the benefits that an outdoor walk will bring, which suggests the possibility of a simple public health campaign (Nisbet & Zellenski, 2011). Those in walkable neighborhoods are also more likely to know their neighbors, be politically and socially engaged, and trust others (Leyden, 2003).

High vegetation levels in neighborhood common spaces predict high use of those spaces, as well as greater neighborhood social ties (Kuo, Sullivan, Coley, & Brunson, 1998). Both vegetation and neighborhood social ties predict residents' sense of safety and adjustment. Surprisingly, evidence from police reports suggests that those living in buildings with a view of natural spaces have lower levels of aggression and violence than those of the same housing development who have views of concrete. This finding holds even when residents were randomly assigned to their building and other factors, such as when the number of apartments per building were accounted for (Kuo & Sullivan, 2001).

In experimental studies, immersion in nature also leads to heightened generosity (Weinstein, Przybylski, & Ryan, 2009) as well as altruism and perspective taking (Mayer & Frantz, 2004). In addition, these positive effects of nature immersion may have spillover effects. For example, as connection to nature heightens generosity, altruism, and perspective taking, our connection with each other may follow suit.

One of the best ways, though, to increase our access to nature may be to help build it. Working together with neighbors in the pursuit of something positive, such as creating a neighborhood garden, is an action step that builds well-being while contributing to a community's sustainability (Okvat & Zautra, 2011).

As we will discuss later on, there are many further ways of making communities more nature-inclusive, and of decreasing the number of links between an individual and their felt experience of the true sources of their food, water, resources, and vitality. Doing so can have remarkably positive associations, from improving community altruism and trust to decreasing police calls (Kuo & Sullivan, 2001; Mayer & Frantz, 2004). More than that, being nature-inclusive allows people to build communities that safe-guard the flourishing of their people and future generations, as well as the whole of life that surrounds them.

Part II: Positive Psychology Applications in Natural Settings

Spirituality

“The happiest life has the greatest number of points of contact with the world, and it has the deepest feeling and sympathy with everything that is.”

- Liberty Hyde Bailey, American naturalist

Spirituality is an area that gives us pause to ask the question, "What do I really value?" The term has been defined as the "search for the sacred" (Pargament & Mahoney, 2009), where sacred is defined as that which is holy, set apart from the ordinary, and worthy of veneration and respect. It can be an important source of well-being.

Spirituality is frequently an experience replete with other relational connections (Vaillant, 2008). Often we speak of spirituality in terms of connection to something higher than ourselves, which for many consists of the faith community, connection to God, or connection to nature. Additionally, religious stories such as the Exodus involve the lesson that "human beings, acting in concert, can take steps together toward their own transformation, sustaining themselves in the process by a vision of the happiness on the horizon" (McMahon, 2011, p. 271). From this perspective, religion is the practice of happiness in the context of community.

There are also growing organizational and scholarly fields studying the intersection of religion and ecology (Tucker & Grim, 2007). Moral questions are beginning to arise, such as how to care for future generations in the context of climate change, overpopulation, destruction of natural resources, and other environmental instabilities. Indeed, a deep ecology worldview is spiritual in nature (Capra, 1996). A deep ecology worldview allows us to feel a sense of interconnectedness and belonging with the whole of the Earth.

Human spiritual connection with the Earth is nothing new; one of the oldest mythical images is that of Gaia, an Earth Goddess who was revered as a supreme deity in early Greece. Today, nature is still a powerful elicitor for spiritual engagement. As cultural historian Thomas Berry (2000) said, "The natural world tells us: I will feed you, I will clothe you, I will shelter you, I will heal you. Only do not so devour me or use me that you destroy my capacity to mediate the divine and the human."

Natural spaces can often trigger transcendence, a state which provides strong positive affect, absorption and sense of significance in the moment, feelings of timelessness and union with a power or entity larger than the self, and feelings of overcoming limits of everyday life (Williams & Harvey, 2001). One type of transcendent experience, called diminutive experience, involves high feelings of fascination with natural elements and high feelings of

humility, typically occurring in complex and novel settings. Another type of transcendent experience is deep flow, which involves full absorption and occurs in settings typically more familiar, open, and imbued with a sense of belongingness. These experiences are often relaxing and involve effortless attention. Interestingly, these experiences of flow can occur in absence of being involved in an activity, which is characteristic of Csikszentmihalyi's (1992) original concept of the term.

The study of spirituality and its relationship to nature is brimming with opportunities for richer exploration. One area for additional research concerns moral behavior conducive to sustainable well-being. For example, Singer (2011) proposes an environmental ethics that takes into account the interests of all sentient creatures and future generations through the choices we make that impact the planet. By studying those engaged in a moral lifestyle of voluntary simplicity, scientists can discover whether living with both a smaller ecological footprint and having richer spiritual practices are a fruitful combination for well-being. Additional questions can explore whether this type of lifestyle also contributes to the ability of other people and other species to flourish.

Ultimately, there is an increased need and desire for a way of life that is both ecologically sound and conducive to human well-being (Harré, 2011). By cultivating both we can advance something truly powerful: a sustainable happiness (O'Brien, 2008). This can be mediated by spirituality, which has great potential to be a driver of well-being (Pargament & Mahoney, 2009). We all are inclined to seek out meaning in our lives, and that search is enhanced through spiritual engagement (Vaillant, 2008). By increasing our connection to systems larger than ourselves, such as community and nature, and by finding the sacred through nature, we will be on a path to support the potential for those around us to flourish for generations to come.

Meaning, Purpose, and Passion

Close cousins to spirituality, meaning, purpose, and passion are also enriching aspects of life and included in Seligman's (2011) framework for flourishing. To have a purpose that is both meaningful to the self and of consequence to the world beyond the self is a truly noble task (Damon, Menon, & Bronk, 2003), and one that will help propel us towards a globe that is flourishing in the most full and enriching sense of the word. In order to advance a passion for the environment that will also lead to flourishing, it is important to understand different kinds of passion.

Mageau and Vallerand (2007) have distinguished between two forms of passion: harmonious passion and obsessive passion. In obsessive passion, people have difficulty setting aside certain activities for the pursuit of others. They tend to have lower levels of positive affect and flow experiences outside the pursuit of their passion. In contrast, those with harmonious passion have more stable affectivity levels when engaged in activities other than their passion. The difference between obsessive passion and harmonious passion is in part due to the motivating forces of the goals that drive them.

In self-determination theory, goals are distinguished between those that are autonomously motivated and those that are motivated through external controls (Brown & Ryan, 2004). Controlled goals involve perceived demands or external pressures on behavior, such as a person's need to meet a deadline for an employer, a desire to be accepted by a peer, or a need to satisfy an impulse. When passions are motivated by external controls, they can feel compulsory and forced. An obsession can form in which goals are overvalued and overly tied to a person's identity, and lower levels of positive affect and flow prevail (Mageau & Vallerand, 2007).

In contrast, autonomous goals are pursued by one's own will and allow freedom of exploration. They are characterized by a deep internal interest and enjoyment for the activity in and of itself (Brown & Ryan, 2004). When passions are autonomously motivated, one

feels a deep sense of engagement in the activity and feels it is valued in its own right (Mageau & Vallerand, 2007). This leads to a harmonious feeling in the passion, a healthy level of identity tied to the passion, and a greater level of positive affect and flow.

As mentioned earlier, the type of autonomy that fuels harmonious passion is also linked to ecological behavior (Brown & Kasser, 2005; Nisbet, Zelenski, & Murphy, 2009; Osbaldiston & Sheldon, 2003; Weinstein, Przybylski, & Ryan, 2009). Engaging in ecological behavior can bring a sense of purpose, while also connecting a person to something larger than themselves. According to Haidt (2006) meaning and happiness come from our relationships with others and through a relationship with something larger than ourselves. Connecting with nature or environmental organizations can bring meaning, purpose, and deeply-rooted happiness.

Further studies may be able to strengthen the links between immersion in nature and a sense of purpose and meaning. Environmental organizations can also help fuel a passion for the Earth that is autonomous and harmonious, rather than externally pressured.

Positive Emotions

According to Fredrickson's (2009) broaden-and-build theory, positive emotions broaden our perspective, awareness, and problem solving skills while building upon our strengths. They help propel us in an upward spiral, allowing us to be better apt to handle challenging situations. In one study, connectedness to nature was found to also boost the ability to problem solve, even when positive affect was controlled, suggesting that time spent in nature can boost thinking skills in similar ways as positive emotion (Mayer, Frantz, Bruehlman-Senecal, & Dolliver, 2009).

Experiences in nature also lead to increases in positive affect (Hartig et al., 2003). These effects suggest that in addition to boosting problem solving skills, nature may have a beneficial role in supporting other aspects of Fredrickson's (2009) broaden-and-build theory.

Certain emotions, such as those experienced during an elevated experience, may even facilitate inner growth more quickly.

According to Haidt, an elevating experience involves an elicitor, a physiological response, and an increased motivation for change (J. Haidt, course lecture, December 10, 2011). The elicitor can be an act of moral beauty or goodness. The response is often chills and a sense of energy. The resulting motivation is to open up and emulate the virtuous behavior observed. Haidt beautifully characterizes these experiences of elevation as moments through which the line between humanness and godliness feels blurred.

Interestingly, though the moment causes an enhanced motivation to act in some way, perhaps to emulate the goodness, action does not necessarily ensue (J. Haidt, course lecture, December 10, 2011). This may be because the openness created in the moment of elevation closes before a real commitment to act has been made. Nevertheless, Keltner and Haidt theorize that a moment of awe, frequently experienced in conjunction with elevating experiences, may potentially be one of the fastest and most powerful paths to personal change and growth. This may be because the experience of awe can involve a reorientation of goals, values, and behaviors (Keltner & Haidt, 2003). Awe involves the experience of vastness and a need to accommodate new information. This phenomenon, then, seems a rare and rather prime moment to create profound and lasting change.

Since awe is so often felt in nature, this may be a particularly important emotion to further inspire personal growth and ecological orientation (Carter, 2009). Carter argues that hope, gratitude, and love are other emotions that may fuel personal growth and ecological orientation.

Positive emotions are more contagious than negative emotions, meaning that if one person is experiencing greater positivity their friends are more likely to also, though a causal relationship remains only theorized (Fowler & Christakis, 2008). Nevertheless, one might

suppose that creating more green spaces and the opportunity to experience awe and other positive emotions could create a chain reaction facilitating growth.

More of the “Good Stuff”

As mentioned earlier, subjective well-being is not correlated with materialistic or extrinsic values, which are values that emphasize image, popularity, financial gain, and consumption of goods (Brown & Kasser, 2005). Furthermore, materialism has negative outcomes on self-esteem, social productivity, psychological health, satisfaction with family life, and overall quality of life (Kasser, 2002; Kasser & Ryan, 1993; Nickerson, Schwarz, Diener, & Kahneman, 2003; Park & John, 2011; Richins and Dawson, 1992). Materialism has negative consequences for psychological as well as ecological well-being.

A majority of the U.S. population would agree that materialism and the accumulation of goods is not the most desirable outcome in life. According to a Gallup poll, when surveying teens age 13-17 on the question, “How would you define success in life—that is, what do you think it is that makes a person successful?”, the most common response was happiness/contentment (Arora, 2004, October 19). Having goals and a good job were second and third. Being rich/having enough money tied for fourth place with having a family and following God’s will. Additionally, 50% of the adult population say that making money is a major personal goal while 37% believe they would be happier if they were rich (Jones, 2006, December 11).

Money has a complex relationship to well-being. The difference in well-being between two like individuals, one with an income \$100,000 greater than the other, is fairly small (Kahneman & Deaton, 2010). This finding may be attributed to our ability to adapt easily to life circumstances, in which the luxuries afforded by a higher income would have a short-lived impact. Nevertheless, income does have some effect on both emotional well-being (the emotional quality of everyday life) and life evaluation (how satisfied one is with

their life as a whole). Beyond a household income of \$75,000/year, there is no improvement in measures of emotional well-being, though there continues to be a rise in life evaluation. On the contrary, poverty exacerbates adverse life conditions such as asthma, the presence of headaches, divorce, and being alone, and well-being is likewise affected (Kahneman & Deaton, 2010).

This finding on the relative importance of money may seem counter to the deleterious effects of materialism on well-being. On closer inspection there are some important points to discern. A certain level of money and material goods may provide a baseline of well-being (Diener & Biswas-Diener, 2002), but after that, other factors related to our relationship with money become more important.

A longitudinal study showed that those with stronger goals for financial success early in life had lower life satisfaction once financial success was achieved (Nickerson, Schwarz, Diener, & Kahneman, 2003). On the contrary, individuals who earned the same amount but had lower financial success goals had higher life satisfaction. Kahneman and Deaton (2010) have suggested that perhaps the finding that money has some relationship to well-being may be due not necessarily to how much money one has, but how the money is spent.

One of the most salubrious ways to spend money may be prosocial spending, or using financial resources to help others (Atkin et al., 2010). Spending on others has been shown to cause a greater increase in well-being than spending on oneself (Dunn, Aknin, & Norton, 2008), and those increases in well-being occur regardless of whether one comes from a financially wealthy nation or poorer nation (Atkin et al, 2010). Altruistic behavior in general has positive correlations with happiness, health, and longevity (Post, 2005).

Other ways money has a greater likelihood of influencing well-being is when people have a perception of financial security (Rath, 2010) and money is used to purchase experiences instead of material goods (Boven & Gilovich, 2003). Fortunately, many

experiences in nature cost no money at all, and living simply can help increase a sense of financial security (Sherlock, 2003). Time spent in natural spaces and a lifestyle of reduced consumption and voluntary simplicity may impact well-being indirectly through these channels.

Overall, the research indicates we can ensure our own well-being and the well-being of the planet by reducing materialistic values and consuming less, as well as shifting our use of finances from “stuff” to the “good stuff”—prosocially helping others and engaging in positive experiences, such as time spent in nature.

Smarter Choices

The realization that stuff does not bring well-being may be starting to hit home on a larger scale. There has been an increase in consumers thinking of major appliances as a luxury rather than a necessity (Morin & Taylor, 2009). From 2006 to 2009 there was a shift in the perception of not needing clothes dryers, TV’s, microwaves, and dishwashers. For example, 68% of the population believed a microwave to be a necessity in 2006, which decreased to 47% in 2009. These trends, though, may be due in large part to the economic downturn as opposed to a shift in values.

Yet, people may also be getting tired of the endless appliances. There are more choices available on products to buy than ever before (Schwartz, 2004). Rather than liberate us, this increase in choice actually debilitates the ability to make choices at all, leading to a kind of paralysis that lowers wellbeing. There is a peculiar irony that occurs when our choices are vast. We assume that having more choices allows us to discover that which brings our deepest satisfaction, yet on the contrary, the value of our ultimate choice actually rises higher when we have fewer options. This phenomenon is known as “opportunity costs” (Schwartz, 2004).

When faced with multiple options for a decision, such as whether to purchase organic eggs versus free-range eggs versus local eggs, we begin by evaluating the pros and cons of each option against the others. In this case, one option may be more humanitarian while another option may be more environmentally or economically sound. Each new option will have a pro that the others may not have. With every evaluation, we rack up more and more costs of missed opportunities. The final option will thus have several strong pros, but also an expanding list of cons, or features we realize we will have to write off in the final choice (Schwartz, 2004).

If we were to consider just one option in its isolation, that option will be valued higher than if we were to consider the option in a set. For example, when students were asked to choose a piece of chocolate to taste from amongst six or thirty chocolates, those who were exposed to more choices gave lower ratings to the chocolate they tasted (Schwartz, 2004).

To resolve this dilemma, Kasser (2011) recommends making smarter choices more salient by decreasing the influence of advertising on children and other avenues known to promote materialism. He also recommends enhancing intrinsic values like benevolence and universalism; engaging in voluntary simplicity, which focuses on “inner riches” instead of outer; supporting time affluence, or more time for engaging in those activities that really make life worth living; and supporting changes in the economic system that make well-being the focus, not GDP.

Stronger Communities

Every community has the potential to continuously define and implement their unique pathways to well-being (Seyfang & Smith, 2007). Through participatory processes, individuals can increase their sense of control by working on projects that enhance their town or city. Our sense of control over both good and bad outcomes has been shown to be highly related to well-being (Mirowsky & Ross, 1990). As mentioned before, so is activism (Klar &

Kasser, 2009). It follows then that providing citizens with a sense of control over the outcomes of their community would potentially increase well-being.

Allowing every sector of a community the opportunity for their voices to be heard is an important component of Appreciative Inquiry (AI; Laszlo & Cooperrider, 2010). AI is a model of systems-based growth that is particularly useful for creating sustainable change. This model takes participants through a four-step process: (1) Discover the best of what is, (2) Dream what might be, (3) Design what should be, and (4) Deploy what will be. As AI developer David Cooperrider says, "Change the image of the future in the collective mind and you set the stage for major change" (D. Cooperrider, course lecture, January 14, 2012).

Appreciative Inquiry emphasizes both top-down and bottom-up approaches (D. Cooperrider, course lecture, January 14, 2012). The goal is not to choose one or the other, but to think in terms of whole systems and change on the scale of the whole. All across the globe similar models are taking hold, as citizens come together to discover and design what will make their community stronger and more fulfilled (Seyfang & Smith, 2007).

For instance, there are nearly 1,000 communities in 34 countries participating in a movement called Transition Town (Transition U.S., 2012). Transition Town is an advanced model of community development that encourages citizens to discuss, dream, and outline the ways in which they can build resiliency and happiness through initiatives that are "environmentally sustainable, spiritually fulfilling, and socially just" (Hopkins & Heinberg, 2008; T. Clarke, personal communication, February 23, 2012). Turning the dreams into reality is made possible by small working groups, populated by those with shared interests or skills with a passion to create meaningful change in the community, particularly around transitioning to ways of life that are less dependent on fossil fuels.

These types of efforts help communities bond together to be resourceful and resilient, to nurture one another and build social capital, to be active in democratic decision making at

local and national levels, to transition to lower energy lifestyles, and to enhance well-being holistically and with future generations in mind. Such communities possess the civic power to meet societal challenges with skill and resiliency, while also working to build their capacity for positive, cooperative relations amongst community members, from the human to the animal and plant species that abound. Examples of outputs might include building a community garden, initiating an energy committee, adding local foods to school menus, or organizing solar raisers, in which neighbors come together to help each other install solar energy equipment. When citizens come together to create visions for their community, those visions are more beautiful and potentially more possible than any one individual vision alone.

As Helliwell (2012) illustrates, it is not uncommon for individuals to bond together under a shared identity and make big changes, especially when they feel a sense of group belonging and that the group is legitimate and important. Helliwell argues that if large numbers of people felt a sense of being a global citizen or guardian of its future, they would have the capacity to make big changes. He argues furthermore that a virtuous circle exists, one in which our natural inclinations toward social connections, pro-social behavior, and personal happiness are supportively linked together and strengthen one another.

The capacity for citizens to work together to create a world that is sustainable and thriving is one of the most powerful and inspiring examples of social and environmental change. Whereas life evolved over considerable length before intentional human input, today humans are learning to do consciously what was once done only automatically. We are shifting whole habitats, changing population levels and pervasiveness of other species, genetically modifying crops and livestock, and altering the evolutionary paths of millions of other life forms. Communities that are consciously aware and effortfully attending to the highest welfare of the life around them are in control of their own well-being and are contributing to big, positive changes for the whole of Gaia. Such efforts can contribute to

positive visions and virtuous cycles, a destiny for the future that is informed and responsible, and through which the entire planet flourishes.

Policy Implications

Traditionally, Gross Domestic Product (GDP) has been used as an indicator of a nation's progress, at least economically speaking. The failings of GDP to indicate improved self-sufficiency, satisfaction of needs, or quality of life has led to creation of other numeric measures, such as the Index of Sustainable Economic Welfare, the Genuine Progress Indicator, the Green National Product, Gross National Happiness, and the Happy Planet Index (Heinberg, 2011). For Seligman (2011) to fulfill his vision of helping 51% of the world to flourish by 2051, there will likely be debates as to how rates of human flourishing will compare against other measurements of national well-being.

While this is but one area related to policy, it is conceivably tied directly or indirectly to all other policies and therefore warrants deeper consideration beyond what this paper can explore. Some countries, such as Bhutan, have already implemented a measure of well-being that takes into account environmental wellness, such as quantities of pollution. Other policy initiatives related to social and planetary well-being include increases in funding for the conservation of green spaces, nature-influenced public health initiatives, and turning sustainability and well-being into a dual national goal. These policies can likewise take a systems-based and nature-inclusive approach, understanding that human well-being is embedded in and influenced by the whole of life around us.

Conclusion

There is a Chinese Buddhist metaphor known as Indra's Net. This imagined net stretches indefinitely in all directions, and at each juncture of material lies a glittering jewel, which reflects all the other jewels of the net. This metaphor entertains the idea that we are not only reflections of, but also reflect everything around us. It leads to the notion that we are

interconnected beings, and a tug of a single jewel creates a cause and effect chain across the entire system (Kaza, 2007). By expanding this notion of respect beyond the human domain and towards an awareness of systems larger than ourselves, we begin to recognize the greater connectivity referred to by Indra's Net—the connectivity we have with the whole of the Earth's species.

As this paper has demonstrated, this connectivity with the rest of life influences human well-being and livelihood. As we think with a systems-approach, we get a deeper and more holistic understanding of our own psychology. As we become more nature-inclusive, we rekindle the natural bonds innate in us all. As we spend more time in natural settings, our well-being flourishes in suit. All of this we can do while supporting our own personal and community growth, caring for the Earth, and being mindful of how our actions influence the ability of other species to flourish.

Future directions for this line of work can further explore how our place in Indra's Net informs our well-being and how this aids in our understanding of our psychology. Positive psychology research that is inclusive of nature can create new interventions that help people and the planet to thrive. The idea of PERMAculture can also be expanded upon, creating theoretical and practical insights in which the welfare of all life is maximized, and communities become more resilient and sustainable as a result.

Writing this paper has filled me with a sense of amazement and wonder. Considering these connections, these ideas, and these opportunities has been energizing and powerful. In the transmission of these pages, the knowledge and ideas learned and generated have given me the hope that a better world is possible. I envision a world in which the roots of well-being run deep and feed us all. I envision a world in which all of life—humans today and future generations, as well as plants, animals, and planetary processes—the whole of Gaia,

can flourish regeneratively. This is what I feel we are striving toward; this is what I hope can be a vision worth working toward.

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