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Basic Needs, Wellbeing and Morality

Fulfilling Human Potential

Edited by
Darcia Narvaez

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Basic Needs, Wellbeing and Morality

“In this fascinating book, the three authors employ a contemporary neurobiological framework that extends the insights of legendary psychologist Abraham Maslow regarding the importance of fulfilling basic needs. The authors convincingly show that wellbeing in early life orients a child to compassionate behavior instead of self-centered protectionism. The research described in this book adds significantly to our knowledge about the effects of parenting on children’s basic needs and on their subsequent sociomoral development.”

—Dr. William Damon, *Professor at the Stanford Graduate School of Education and Director of the Stanford Center on Adolescence, and co-author of The Power of Ideals*

“In this brief but powerful book, Narvaez and colleagues show unequivocally that children, especially young children, are entitled to a set of developmental rights, and then they provide a tool, the Basic Needs Satisfaction Survey, to ensure these rights are being assessed and their improvement documented. It is essential reading for those in educational and medical/health settings, as well as anyone dedicated to helping all children flourish and reach their human potential.”

—Maurice J. Elias, *Ph.D., Director, Rutgers Social-Emotional and Character Development Lab and co-author of Boost Emotional Intelligence in Children and Emotionally Intelligent Parenting*

“This innovative book is a significant contribution to the existing scholarship, enriching our understanding of moral development and its connection with basic needs being met. Based on a human capabilities approach, it changes the focus from self-centered protectionism to compassionate morality, emphasizing babies’ freedoms and rights. It is a must-read for anyone who wants to create caring homes and schools.”

—Tatyana Tsyrlina-Spady, *Professor Emeritus, History and Theory of Education, Kursk State University, Kursk, Russia; Adjunct Professor, School of Education, Seattle Pacific University, Seattle, WA, USA*

“This book gives a new psychobiology of the human spirit, reviewing research that identifies sympathetic motives and feelings as the source of human wellbeing and development—from a Baby Bill of Rights in the Evolved Developmental Niche of parental care, to self-confident learning of a creative and healthy lifetime in the culture of a community rich in art and kindness, as well as industry.”

—Colwyn Trevarthen, *Professor (Emeritus) of Child Psychology and Psychobiology at The University of Edinburgh, UK, Fellow of the Royal Society of Edinburgh, and a Vice-President of the British Association for Early Childhood Education*

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Editor

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*To those who nurture the wellbeing of all societal members, especially
the youngest*

PREFACE

The aim of the book is to emphasize how flourishing in individuals facilitates health but also morality. Our focus differs from the typical moral development book that tends to address moral reasoning and judgment. We use triune ethics meta-theory (TEM) as the backdrop for linking wellbeing and morality. TEM emphasizes neurobiological-emotional development as undergirding adult moral functioning. Wellbeing, especially in early life when body and brain are being co-constructed by experience, fosters an orientation to compassionate morality instead of self-centered protectionism. In prior publications, we have examined parenting effects on moral development, showing how evolved needs require particular kinds of care (what we now call the evolved nest). This book presents the next step, to show how basic needs being met does indeed contribute to moral development. We can draw the linkages between perceptions of basic needs provision the type of care reportedly received in childhood.

This book presents a way to specifically measure perceptions of basic needs provision. This has not been reported or published before. We have two new measures we discuss: contemporary basic needs provision and childhood basic needs provision. We present data showing that both measures are related to health outcomes.

The first author would like to thank the University of Notre Dame for its continued support for scholarship on human flourishing. She would also like to thank Templeton Religion Trust for its support of the Self, Motivation and Virtue Project, under the auspices of which this book

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CHAPTER 1

The Notion of Basic Needs

Darcia Narvaez and Rebecca Noble

Abstract We describe Maslow's hierarchy of basic needs and the importance of basic needs satisfaction and how lack of provision leads to stress. When basic needs are not provided, it creates a situation of stress, leading to poorer health outcomes. We discuss the outline of the book where we discuss two new comprehensive measures of basic needs. In Chapter 2, we describe the creation and validation of a comprehensive measure of basic needs. In Chapter 3, we examine the evolutionary inheritances of basic needs as they pertain to the evolved nest, discuss and test a retrospective measure of basic needs in childhood and contrast it with the evolved developmental niche (EDN) history measure. In Chapter 4, we examine the relation of basic needs to moral functioning. In Chapter 5, we examine other models of basic needs and draw some conclusions.

Keywords Maslow · Basic needs · Health · Stress · SES

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In this chapter, we lay out Abraham Maslow's hierarchy of basic needs (later expanded upon in Chapters 3 and 5). I follow this by providing empirical findings that show the importance of basic needs fulfillment in adulthood.

MASLOW'S HIERARCHY OF BASIC NEEDS

All organisms have needs. Typically, animals whose basic physiological needs (e.g., food, water) are not met for any length of time do not survive. In mid-twentieth century, among researchers, the idea of basic needs expanded to more areas in life beyond the physical. Mammals whose physiological needs are met but not higher order needs (love, affection) also suffer, as Harry Harlow (1958) demonstrated in experiments with mother-deprived monkeys.

The notion of basic needs entered broadly into psychological research discourse with humanistic psychologist, Abraham Maslow. He challenged the paradigms of both dominant theories of the time, psychoanalysis, and behaviorism. In his text, *Motivation and Personality* (1970), discontented with psychoanalysis' emphasis on psychopathology, he promoted health and wellbeing:

The motivational life of neurotic sufferers should, even in principle, be rejected as a paradigm for healthy motivation. Health is not simply the absence of disease or even the opposite of it. Any theory of motivation that is worthy of attention must deal with the highest capacities of the healthy and strong man as well as with the defensive maneuvers of crippled spirits. (Maslow, 1970, p. 33)

He also sought to shift the discussion of human motivation from the behaviorist focus on drives to needs—from “pushes” (drives) to “pulls” (needs). The study of rats, which were (and are) the typical animal tested in psychological experiments, oriented researchers to physiological needs since rats are highly oriented to eating, what researchers called an instinctual drive. But, according to Maslow, the more sophisticated goals of humans do not fit the notion of drives (e.g., desire for love, or for self-actualization). Nor is a healthy person neurotic as Freud (1933) postulated was the normal human condition.

In contrast to psychoanalysis, Maslow argued for a normative biology, saying that “The healthy organism itself gives clear and loud signals about what it, the organism, prefers or chooses, or considers to be desirable states of affairs. It is too big a jump to call these “values”? Biologically intrinsic values? Instinct-like values?” (Maslow, 1971, p. 12). Maslow pointed out that facts and values, which some scholars are concerned to keep separate, are fused in terms like “mature, evolved, developed, stunted, crippled, fully functioning, graceful, awkward, clumsy” (ibid., p. 30). As others have pointed out (e.g., Lapsley, 2006), the notion of development itself necessarily involves normative claims. What is the expected and best aim for development?

Maslow could not find scientific research that revealed the characteristics of healthy adults, so he turned to literature, autobiography and the study of acquaintances. He discovered layers of needs that he presented in a hierarchical manner. Maslow warned against setting up a specific list of drives or needs for several reasons: (1) they imply an equality of needs whereas in reality, the potency of one need will vary in importance and in relation to others; (2) drives are not isolated from one another—they are not mutually exclusive; and (3) an expressed, measurable desire may be a means to satisfy other drives. As a result, for the prior reasons an individual’s motivated behavior and specific goals are not a good way to classify drives. Instead, Maslow states: “If only by the process of logical exclusion alone we are finally left with the largely unconscious fundamental goals or needs as the only sound foundations for classification in motivation theory” (Maslow, 1970, p. 27).

Maslow divided basic needs or values into several categories: physiological, safety, belonging and love, esteem, and self-actualization.¹ His categories were loose and fuzzy, with many definitions vague or preliminary. He noted that there was little information on some of these needs in scientific circles, requiring a review of literature and autobiography for source material.

Physiological Needs

He discussed homeostasis and how it involves so many systems that there is no purpose in trying to make a list of physiological needs. And he said that in normal society you are not really going to see physiological needs unmet.

Safety Needs

Safety needs include: “security; stability; dependency; protection; freedom from fear, from anxiety and chaos; need for structure, order, law, limits; strength in the protector; and so on” (Maslow, 1970, p. 39).

Belongingness and Love Needs

Maslow argues that once physiological and safety needs are met, needs for affectionate relationships will be felt keenly and be a primary goal. Stating that there is little scientific evidence, he relied on fiction, autobiographies, and sociological literature to note the destructive effects of uprootedness on all ages, but especially the young. “Practically all theorists of psychopathology have stressed thwarting of the love needs as basic in the picture of maladjustment” (Maslow, 1970, p. 44). Love needs are relational, the giving and receiving of affection.

Esteem Needs

Esteem needs refer to self-respect and self-esteem and the esteem of others. The first aspect is a desire for competence, for mastery. The other aspect is a desire for prestige, dignity, or appreciation. Satisfaction of esteem needs leads to self-confidence and feeling necessary in the world, as opposed to feelings of helplessness, inferiority, and discouragement.

Self-Actualization Needs

Self-actualization needs refer to the fulfillment of one’s own nature. “A musician must make music, an artist must paint, a poet must write, if he is to be ultimately at peace with himself. What a man *can* be, he *must* be. He must be true to his own nature” (Maslow, 1970, p. 46). We discuss the details of Maslow’s view of self-actualization in fuller detail in Chapter 5.

Empirical psychological science has created measures that address many of the basic needs that Maslow identified, and researchers have noted the effects of their fulfillment on health and wellbeing. We describe this research in Chapter 2. In the rest of this introduction, we note some findings regarding stress and health. When basic needs are not met, it is stressful to that organism and can have long-term effects.

In the studies, described in the chapters ahead, we use Susan Fiske's (2004) BUCET list (belonging, understanding, control, self-enhancement, trust) as a model for basic needs assessment because many measures fit into its framework. The BUCET model takes for granted physiological needs. Maslow's categories are otherwise spread throughout. The BUCET list represents social motives, aimed at helping one fit better into groups, motives that revolve around the first one, belonging, the most fundamental. Two motives are more cognitive—understanding being largely reflective and control being largely action-based—and two motives are more affective—self-enhancement focusing on the self whereas trust focusing on others.

Belonging

Subjective wellbeing is linked to having close social ties (Baumeister, 1991). Poor health is predicted by problems in close relationships (Stansfeld, Bosma, Hemingway, & Marmot, 1998). Maslow's love needs would fit in here as well as his belonging needs.

Understanding

People need to make meaning from experience. Lack of information leads to a process of finding explanations and causes (Kelley, 1967). Sharing theories of explanation with others lead to shared social understandings (social representations, Moscovici, 1988) or group meaning (Zajonc & Adelman, 1987). Social support that enhances health must provide a sense of belonging and help people feel more in control, as though building competence and self-efficacy (Berkman, 1995).

Control

Competence, or control, fits into Maslow's esteem needs. Robert White (1959) described effectance as a need for social competence or control (Fiske, 2004), which is apparent from early life when young children express themselves and expect a response. When control is lacking, individuals seek information to restore a sense of control, becoming more sensitive to social information (Gleicher & Weary, 1995; Pittman, 1998; Pittman & Pittman, 1980).

Self-Enhancement

Feeling good about oneself facilitates cooperation with others and within a group. Low self-esteem represents anticipated rejection by important social others (Leary, Schreindorfer, & Haupt, 1995). Those who feel socially excluded are more likely to engage in socially and self-destructive behavior like aggression or substance abuse (Fiske, 2004). Self-enhancement can be about putting others first and improving the self or it can be about putting oneself first and keeping a positive view of the self (Fiske, 2004). Enhancement combines Maslow's esteem and, to a degree, self-actualization needs.

Trust

Trust represents "confidence or faith that some other, upon whom must depend, will not act in ways that occasion us painful consequences" (Boon, 1995, p. 656). Maslow would fit this into safety needs. Trust is particularly relevant for young children, who are building their sense of trust in the world that goes all the way down to their neurobiological functioning. As a form of social intelligence (Yamagishi, 2002), trust building is especially important in the first year of life (Erikson, 1950). People who are trusting are more socially successful, less suspicious, resentful or lonely (Gurtman, 1992; Murray & Holmes, 1993; Rotenberg, 1994; Rotter, 1980). Susan Fiske has found that trusting people "go with the flow" (Morling & Fiske, 1999).

The BUCET model represents the basic needs that human beings require to function well. More and more research studies are showing that when basic needs are not fulfilled, problems ensue. We discuss those problems throughout the book. Basic needs unmet results in stress and impaired capacities.

EFFECTS OF MISSING BASIC NEEDS

An increasing number of studies are showing the links between stress and ill health. For example, each of the identified basic needs is correlated with physical and mental health, which we discuss in Chapter 2. But often the focus in health communities is on socioeconomic status (SES) as a primary factor in health outcomes. SES and chronic stress each reflect a lack of basic needs provision. We examine both areas of research next.

Health and Socioeconomic Status

A great deal of focus among researchers of wellbeing concerns economic wealth. A plethora of studies examine the effects of socioeconomic status on child and adult outcomes. For example, previous research has revealed a graded association between SES and health (most notably, the Whitehall study examining mortality in England; Marmot, Shipley, & Rose, 1984). Adults with lower SES have been shown to have higher risk for cardiovascular disease, diabetes, metabolic syndrome, arthritis, tuberculosis, gastrointestinal disease, and adverse birth outcomes (Adler & Ostrove, 1999) as well as higher rates of both major depression and general depressive symptoms (Adler et al., 1994). In a longitudinal sample, recent evidence points to environmental exposures (both physical and psychosocial) that elevate stress levels (Adler & Snibbe, 2003; Evans & Kim, 2012; Siegrist & Marmot, 2004). Basic psychosocial needs are included in such psychosocial environmental stressors. For example, environments that undermine personal control have been associated with chronic stress, which is in turn related to increased risk for the development of diseases like congenital heart disease (Siegrist & Marmot, 2004). One longitudinal study (Kiviruusu, Hurre, Haukkala, & Aro, 2013) found that differences in health along the SES gradient over time increased only when accompanied by a decrease in psychological resources, revealing the important role of psychosocial factors within the context of the SES health gradient. Some studies even suggest that psychosocial resources could be predictors of health on their own (Matthews, Gallo, & Taylor, 2010).

Adler et al. (1994) proposed that this relationship could be explained by an influence of SES on biological functions, which in turn impact health. Evans (2017) found that poverty in childhood (assessed at age 9) was related to adult (age 24) externalizing, helplessness during a cognitive task, and impaired short-term spatial memory. His team has found an increased allostatic load in his impoverished longitudinal sample (Caucasians from upstate New York).

Chronic Stress

The findings on poverty's ill effects align with the notion that chronic stress undermines healthy development in multiple areas. Indeed, several decades of research have demonstrated that chronic stress responses

(e.g., elevated and poorly regulated cortisol) cause many ill health effects (e.g., Chrousos & Gold, 1992). The immune system is a homeostatic system² that is well integrated with the stress response, mobilizing against infection from invaders, or warning of imbalance in the body's microbiome. When "fight-or-flight" is activated by the stress response system, the immune system increases the number and motility of white blood cells (leukocytes) in the bloodstream (Coe, 2002). The immune system interacts with the endocrine and autonomic nervous systems. If the stress response becomes chronic, the size of the thymus and lymph nodes decrease over time, leaving one more and more vulnerable to illness. The thymus is a relay system for sensory perception and cognitive response and so its shrinkage affects intelligence.

As a result of the interrelation between immune and stress responses, the immune system is implicated in several disorders, including autoimmune disorders (e.g., fibromyalgia, chronic fatigue syndrome, rheumatoid arthritis; Stojanovich & Marisavljevich, 2008). Stressful environments increase bacterial and respiratory infections and decrease wound healing (Boyce et al., 1977; Gouin & Kiecolt-Glaser, 2011; Meyer & Haggerty, 1962). For example, among college students, exam weeks take a toll, affecting the immune system for two weeks or longer (Glaser et al., 1990; Kang et al., 1997). Induction of a sad mood increases the likelihood of getting a cold after exposure to a virus (Cohen, Tyrrell, & Smith, 1991). In adults, social stress contributes to coronary heart disease (Shively, Register, & Clarksen, 2009) and social stress is linked to osteoporosis in older women (Lee et al., 2017), due to glucocorticoid inhibition of "anabolic housekeeping" that replaces old calcium with new in bones (Sapolsky, 2004). In humans, short-term stressors stimulate growth hormone whereas sustained stressors inhibit it (growth hormone effects take hours—to shut down or start up).

General life events such as unemployment, environmental disasters, and divorce cause immune alterations (Herbert & Cohen, 1993; Ironson et al., 1997). The ability of the immune system to mobilize, form antibodies, and attack malformed cells is compromised by such stressful negative experiences (Kiecolt-Glaser et al., 1987). Levels of activity of natural killer (NK) cells and the severity of disease load are correlated with an individual's sociality and ability to express emotions (Levy, Herberman, Maluish, Schlien, & Lippman, 1985; Temoshok & Fox, 1984), which may explain why social support directly benefits cancer patients (Spiegel, 1992). Sadness inhibits cellular activity such as

lymphocyte proliferation (Bartrop, Luckhurst, Lazarus, Kiloh & Penny, 1977) and NK cell activity (Irwin, Daniels, Smith, Bloom, & Weiner, 1987). Thus, a general assessment of basic needs satisfaction may be an informative predictor of mental and physical health, above and beyond SES.

Chronic stress harms health and it is our contention that basic needs unfulfillment brings about stress. We will also examine in Chapter 3 how stress in early life is particularly harmful and how it is brought about by a lack of needs fulfillment during that time period.

INTRODUCTION TO THE REST OF THE BOOK

At the time of our research, no comprehensive measure of basic needs existed so we developed two new measures that are discussed in several chapters in this book, the Basic Needs Satisfaction Survey and the Basic Needs History measure.

In Chapter 2, we discuss the components of measurable basic needs several researchers have identified. In a review of social psychological research, Susan Fiske (2004) identified a BUCET list of basic needs which includes Belonging, Understanding, Competence, self-Enhancement and Trust. Based on research with WEIRD samples (Western, Euro, Industrialized, Rich, Democratic; Henrich, Heine, & Norenzayan, 2010), the BUCET list does not address Maslow's (1970) physiological or safety needs. But all the BUCET list basic needs have been correlated with positive outcomes and there is a plethora of measures that test one or a few basic needs. At the start of this project, no measure comprehensively measured the BUCET list, so in Chapter 2, we describe the research we conducted with a comprehensive measure of the eight aforementioned basic needs. The comprehensive measure was useful in examining the power of a comprehensive measure in predicting physical and mental health.

In Chapter 3, we expand the horizon a bit. Most of the time, researchers do not attend to our evolutionary heritages. Although Maslow noted some evolutionary features of human needs in his writing, he did not have a comprehensive view of human evolutionary basic needs. In Chapter 3, we discuss the notion of basic needs more broadly, bringing in evolutionary arguments. We describe the larger evolutionary grounding of intensive basic needs in early life, needs provisioned by the evolved developmental niche (EDN). The EDN is a set of

specific caregiver practices that foster a healthy psychosocialneurobiology, influencing wellbeing for the long term. The EDN for young children includes at least the following: infant-initiated breastfeeding for several years, nearly constant affectionate touch early, responsiveness to needs so the young child does not get distressed, self-directed playful companionship with multi-aged playmates, multiple adult caregivers, positive social support, and soothing perinatal experiences. Research has shown that each of these features fosters human health and wellbeing.

Could basic needs support in early life predict positive outcomes? And does a retrospective history measure differ in its predictive validity from contemporary basic needs satisfaction? In Chapter 3, we report on our examination of the relation of early experience to basic needs fulfillment, starting with a measure of EDN history and followed by a report on the development of a retrospective measure on basic needs satisfaction in childhood.

In Chapter 4, we discuss the nature of morality, emphasizing its post-natal shaping based on early experience and the fulfillment (or not) of basic needs (the EDN). Triune ethics meta-theory considers both the early shaping of brain and body systems and provides an account of how human inherited moral capacities, such as compassionate morality, is facilitated by or thwarted by early experience (or later trauma). With species-typical support in early life, through provision of the EDN (e.g., soothing perinatal experience, positive support from multiple responsive caregivers, extensive breastfeeding and affectionate touch), the neurobiological substructures of human cooperation are shaped (e.g., oxytocin system, stress response system). Poor early experience represents toxic stress to a developing system leading to an enhancement of survival systems at the expense of capacities for human cooperation. We then discuss our empirical work relating basic needs fulfillment to morality where we find expected correlations—that the more that individuals report basic needs satisfaction, the greater their orientation to, capacities for and actions toward cooperative, compassionate morality. We report on how scores on basic needs satisfaction add to measures of childhood experience in predicting relational and self-protective moral behavior in hierarchical regressions.

In Chapter 5, we further discuss human potential. We examine Maslow's notion of self-actualization and compare it with that of humanity's ancestral environment. We also describe other approaches to fulfilling human potential, including child honoring and the human

capabilities approach. We end the chapter by suggesting a greater emphasis on promoting wellbeing in early life, including offering a preliminary baby bill of rights.

We end the book with an epilogue about what needs next to be done. The intergenerational cycle of denying basic needs fulfillment to children must be reversed for the benefit of society and the wellbeing of the planet.

NOTES

1. Abraham Maslow was the first of Western psychologists to emphasize the importance of meeting basic needs and laid out a list of components. He argued for a hierarchical set of needs—that the lower needs needed to be satisfied before the higher needs could be sought. The evidence against this notion is widespread anecdotally. People who are hungry and without shelter (physiological needs) will love and protect a dog (love needs); concentration camp prisoners will give their meager rations (physiological needs) to others more in need (self-actualization). So, the hierarchy idea is questionable from those stories. Some studies question the hierarchical aspect of the theory whereas others find it useful (e.g., Duncan & Blugis, 2011; Noltemeyer, Bush, Patton, & Bergen, 2012; Wahba & Bridwell, 1976).
2. The immune system hails back to the first multicellular animals who made a distinction between self and other, engulfing the foreigner or moving it out (Beck & Habicht, 1996). With the evolution of fish came the antibody (lymphocyte excreting protein to adhere to foreigner) (Litman, 1996).

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Measuring Basic Needs Fulfillment and Its Relation to Health and Wellbeing

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Abstract Prior research proposed five basic needs: belonging, understanding, control, enhancing self, and trust (BUCET). Individually, each has been associated with physical and mental health. To date, basic psychosocial needs have been measured individually. These studies aim to validate a new, short and comprehensive measure of basic psychosocial needs, the Basic Needs Satisfaction Survey (BNSS), and demonstrate its association with physical and mental health. Study 1 confirmed previous EFA results for the BNSS and tested both convergent and predictive validity. Study 2 used CFA and examined divergent validity. Regression models investigated the role of the BNSS subscales as predictors of physical and mental health. Analyses from two studies demonstrated construct validity and predictive ability, providing evidence that the BNSS

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is reliable and valid and significantly related to both physical and mental health independent of socioeconomic status. Useful for predicting health outcomes, BNSS may be useful as a screener in medical settings.

Keywords Basic needs · Health · Wellbeing · Depression · Socioeconomic status

All living organisms require sunlight, water, oxygen (or carbon dioxide), nutrients, and a suitable habitat to live and grow. Beyond these well-established physiological needs, several basic psychosocial needs have been identified as requirements for human survival and wellbeing (Fiske, 2004), particularly for physical and mental health (e.g., Boehmer, Luszczynska, & Schwarzer, 2007; Hale, Hannum, & Espelage, 2005).

Basic needs refer to a set of innate and universal needs that must be fulfilled for optimal human functioning and development (Deci & Ryan, 1985). Maslow (1943) first introduced the concept, proposing that humans are motivated by five basic needs: physiological, safety, love, esteem, and self-actualization. Since Maslow's (1943) seminal work, others have proposed their own lists of basic needs. Deci and Ryan (1985) argued that humans are motivated by the need for autonomy, competence, and relatedness (self-determination theory). Ed Diener and colleagues (Diener, Emmons, Larsen, & Griffin, 1985) proposed that subjective wellbeing depends on the achievement of life satisfaction.

More recently, Susan Fiske (2004) reviewed the social psychology literature and constructed a list of five "core social motives:" belonging, understanding, control, enhancing self, and sense of trust (BUCET list). Extensive previous research revealed relationships among the individual basic needs and both physical and mental health. A very brief review of some of this vast literature follows, using Fiske's BUCET list as a framework.

BELONGINGNESS

Belongingness refers to a need to form lasting supportive relationships with others (Fiske, 2004). Belongingness is associated with subjective wellbeing (Baumeister, 1991), and with both physical and mental health problems (Moak & Agrawal, 2010), predicts perceptions of health in women and physical symptoms of health in men (Hale et al., 2005), and

improves outlook after traumatic health events such as cancer diagnosis (Boehmer et al., 2007; Luszczynska, Mohamed, & Schwarzer, 2005; Schulz & Mohamed, 2004). Conversely, social isolation is a risk factor for morbidity from various conditions, even after controlling for biological risk (House, Robbins, & Metzner, 1982).

UNDERSTANDING

Understanding refers to a sense of life coherence and purpose (Fiske, 2004), is associated with psychological wellbeing (Zika & Chamberlain, 1992), and is protective against thoughts of suicide (Heisel & Flett, 2004). Purpose refers to having a personally-meaningful goal that is also of consequence to the rest of the world (Damon, Menon, & Bronk, 2003). Having a sense of purpose buffers widely against mortality, for example, with increased lifespan even after controlling for other factors of psychological and affective wellbeing (Hill & Turiano, 2014). Among adolescents, meaning in life protects against risky health behaviors, including drug use, sedative use, unsafe sex, lack of exercise, and lack of diet control (Brassai, Piko, & Steger, 2011). In healthcare settings, those with a coherent sense of life were more likely to adjust better psychologically following major medical experiences, such as cancer (Vehling et al., 2011) and bone marrow transplant (Johnson Vickberg et al., 2001).

CONTROL

Control is the need to be able to influence the outcomes of life events (Fiske, 2004). Both the need for autonomy (i.e., being the source of one's own behavior) and the need for competence (i.e., feeling effective in one's interactions with others) identified by self-determination theory (Deci & Ryan, 1985) fall under this category. Low sense of control at work and at home is related to higher risk of developing depression and anxiety (Griffin, Fuhrer, Stansfeld, & Marmot, 2002). Those with less perceived control tend to rate themselves lower on health and show less preventative self-care, have less optimism about early treatment effectiveness, and have higher illness, bed confinement, and dependence on their doctors (Seeman & Seeman, 1983). Conversely, Taylor and Brown (1988) suggested that feeling in control may relate to better health, increased happiness, and longer life expectancy. In particular, perceived control predicts functional and physiological health (Infurna & Gerstorf, 2014).

SELF-ENHANCEMENT

Self-enhancement refers to the need to feel good about oneself (self-esteem) and to be motivated by the possibility to improve oneself (self-enhancement; Fiske, 2004). High self-esteem (i.e., confidence in one's self-worth) is related to physical and mental health and, when lacking in adolescence, predicts health-compromising behaviors including problem eating and suicidal ideation (McGee & Williams, 2000). In adulthood, lack of self-esteem is related to poor cardiorespiratory health, high waist-to-hip ratios, and poor self-perceived health in adulthood (Trzesniewski et al., 2006). Self-enhancement involves a sense of self-efficacy (i.e., belief in one's ability to succeed). High levels of self-efficacy in various domains (e.g., academic, physical, and overall) are related to a lack of depression (Ehrenberg, Cox, & Koopman, 1991) and to success with proactive health behaviors including smoking reduction, weight control, increase in exercise, abstinence from alcohol, and effective use of contraceptives (Strecher, DeVellis, Becker, & Rosenstock, 1986).

TRUST

Trust refers to a perception of benevolence from the world (Fiske, 2004). It is a general sense that life is trustworthy. This type of trust is related to interpersonal trust. High levels of interpersonal trust have been correlated with better self-rated health and longevity (Barefoot et al., 1998) whereas low levels are correlated with depression (Kim, Chung, Perry, Kawachi, & Subramanian, 2012).

There are several measures that individually assess each of these basic needs. However, to the authors' knowledge at the beginning of this project there were no single measures that comprehensively evaluate all identified psychosocial needs. Here, the aim was to develop a measure that combined Fiske's five BUCET variables and integrate additional needs identified by others: autonomy (Deci & Ryan, 1985), life satisfaction (Diener et al., 1985), and purpose (Damon et al., 2003; Staub, 2003). In two studies, a comprehensive measure was developed and validated to investigate the relation of comprehensive needs satisfaction to physical health and mental wellbeing.

CURRENT STUDIES

Pilot Study

The purpose of the pilot study was to develop a comprehensive measure of the basic psychosocial needs and examine the factor structure of these items. After approval of study design and measures by the Institutional Review Board, a general population sample of 250 USA adults was recruited and paid through Amazon Mechanical Turk. Participants completed a survey online (through Qualtrics) in a single session after providing consent. With exclusions for incomplete surveys, the final sample included 239 participants (54.4% men; $M_{age} = 32.46 \pm 11.70$ years; 78.2% White/European American; with yearly income well distributed).

Compiling eight basic needs as identified by other researchers, starting with Fiske's BUCET list, we created a pool of 24 items. Although Fiske's BUCET list is fairly comprehensive, several other basic needs have been identified by other scholars. We added these to the BUCET list. Edward Deci and Richard Ryan (1985) identified *autonomy* as part of developed self-determination theory, which is linked to healthy self-regulation and positive mental health (Ryan & Deci, 2006). We also added *life satisfaction* (Diener et al., 1985), a general subjective state of wellbeing which requires making cognitive judgments regarding the state of one's circumstances in comparison to the standard one sets for oneself. For eight identified basic needs, three items each (two positive and one negative) were included to assess: belonging, purpose, life satisfaction, autonomy, control, competence, self-enhancement, and trust.¹ Items were scored on a 5-point Likert-type scale (1 = "Strongly Disagree" to 5 = "Strongly Agree").

The 24 items were subjected to Principle Component Analysis using SPSS 19. To determine the final factor structure, we excluded items with factor loadings less than 0.4 unless the basic need was unrepresented, and excluded items with positive factor loadings greater than 0.2 on more than one factor. These were generous criteria for theoretical reasons of inclusivity. Two factors were extracted and labeled *Effectance*, which reflects a fulfillment of basic psychosocial needs ($\alpha = .86$; 11 items, e.g., "People care about me") and *Discouragement* which reflects lack of or thwarting of basic psychosocial needs ($\alpha = .88$; eight items, e.g.,

Table 2.1 Basic Needs Satisfaction Survey Rotated Component Matrix

	<i>Component</i>		<i>Factor</i>
	<i>1</i>	<i>2</i>	
In key areas in my life I can make choices that matter. (Autonomy)	.771		E
People care about me. (Belonging)	.768		E
When necessary, I can find support that I need from others. (Trust)	.748		E
My life is satisfying. (Life satisfaction)	.747		N/A
I am unhappy with my life. (-Life satisfaction)		.449	D
I can shape my world (Control).	.714		E
My life is meaningless. (-Purpose)	-.710		D
I feel beaten down. (-Enhancing self)		.491	D
I feel like I don't belong anywhere. (-Belonging)		.438	D
Even though I may feel down sometimes, I know that things will improve. (Life satisfaction)	.698		E
I trust that I can safely make my way in the world. (Trust)	.694		E
I have opportunities in my life to improve my skills and talents. (Enhancing self)	.685		E
I have the opportunity to improve myself day to day. (Enhancing self)	.685	.378	N/A
I feel like I have influence on those who are important in my life. (Control)	.669		E
When I need to, I have the ability to make choices. (Autonomy)	.668	.295	N/A
I feel boxed in with no freedom. (-Autonomy)		.417	D
Other people value my skills. (Competence)	.662		E
I have goals for my life. (Purpose)	.661		E
In key areas in my life, I feel incapable. (-Competence)		.475	D
I fit into at least in one social group. (Belonging)	.626		E
I feel like I have talents to share with others. (Competence)	.537	.229	N/A
There is nothing I can do to change my life. (-Control)		.289	D
The world is a mean place so I have to be careful. (-Trust)		.452	D
I feel like there is a higher purpose for my life. (Purpose)	.452	.238	N/A

Note $N=239$; Extraction method: Principal component analysis; Decisions were made based on theory and balance among basic needs. E = Effectance; D = Discouragement

“My life is meaningless”). See Table 2.1 for factor loadings. We called the measure the Basic Needs Satisfaction Survey (BNSS).

STUDY 1

The purpose of Study 1 was to confirm the two-factor model and evaluate the psychometric properties of the BNSS. A confirmatory factor analysis was conducted to verify the results of the pilot study PCA. In the first study, we examined the validity of the measure in adequately measuring basic needs. We tested the measure against individual measures of each basic need. To assess whether the new measure could predict outcomes, we assessed physical and mental health. It was expected that existing measures of individual basic needs would correlate positively with Effectance and negatively with Discouragement and that measures evaluating thwarting, or absence of individual basic needs, would correlate positively with Discouragement and negatively with Effectance. Effectance was expected to correlate with physical health status (i.e., good health status) and mental wellbeing, while Discouragement to correlate with physical health behavior (i.e., visits to healthcare providers and use of medications) and mental illness, matching prior research showing that basic psychosocial needs correspond to these outcomes.

Method

Participants and General Procedure

After approval of study design and measures by the Institutional Review Board, a general population sample of 250 USA adults was recruited and paid through Amazon Mechanical Turk. Participants completed a 30-minute survey online (through Qualtrics) in a single session after consent. With exclusions for incomplete surveys, the final sample included 227 participants (40.1% men; $M_{age}=37.26$, $SD=13.39$ years; 84.1% White/European American, with yearly income well distributed).

Measures

All measures were self-report. Unless otherwise specified, mean scores were used in analysis. Cronbach's alphas are displayed in results section.

Basic Needs Satisfaction Survey

A confirmatory factor analysis was conducted in R, using the lavaan package (Rosseel, 2012), to validate the two factors extracted in the pilot study. Several fit indices suggested that the two-factor model was sufficient ($CFI=0.95$, $RMSEA=0.07$, $SRMR=0.05$). Chi-squared was

significant ($p < 0.01$) but given the other fit indices and the fact that chi-squared falsely punishes large sample sizes (i.e., $N > 100$), the model was still ruled a good fit. Cronbach's alpha evaluated internal consistency of the items in each subscale:

Effectance ($n = 11$; $\alpha = .91$) and Discouragement ($n = 8$, $\alpha = .90$).

Belongingness

Belongingness was assessed using two subscales from the Berlin Social Support Scale (Schulz & Schwarzer, 2003): Perceived Emotional Support (four items, e.g., "There are some people who truly like me") and Perceived Instrumental Support (four items, e.g., "When I am worried, there is someone who helps me"), using a 4-point Likert-type response scale (1 = *Strongly Disagree*, 4 = *Strongly Agree*).

Understanding

Understanding was assessed with three measures: (a) The Life Engagement Test (Scheirer et al., 2006) has six items (e.g., "To me the things I do are all worthwhile;" 1 = *Strongly Disagree*, 5 = *Strongly Agree*); (b) The Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2006) has five items (e.g., "I understand my life's meaning;" 1 = *Absolutely Untrue*, 7 = *Absolutely True*); (c) The Satisfaction with Life Scale (Diener et al., 1985) has five items (e.g., "In most ways my life is close to my ideal;" 1 = *Strongly Disagree*, 7 = *Strongly Agree*).

Control

Autonomy, competence, and control in life were assessed to represent control: (a) The Autonomy subscale from the Sociotropy Autonomy Scale (Bieling, Beck, & Brown, 2000) which assesses Independent Goal Attainment (eight items, e.g., "If a goal is important to me I will pursue it even if it may make other people uncomfortable;" 1 = *Strongly Disagree*, 5 = *Strongly Agree*); (b) The Competence Scale from the International Personality Item Pool (IPIP; Goldberg et al., 2006; 10 items, e.g., "I come up with good solutions;" 1 = *Strongly Disagree*, 5 = *Strongly Agree*); (c) Control was measured using two subscales from the Spheres of Control Scale (Paulhus & Van Selst, 1990): Personal Control (10 items, e.g., "I can usually achieve what I want if I work hard for it") and Interpersonal Control (10 items, e.g., "I have no trouble making and keeping friends") with a 7-point Likert-type scale (1 = *Disagree*, 7 = *Agree*).

Self-Enhancement

The Core Actualization factor of the Brief Index of Self-Actualization measured self-enhancement (Sumerlin & Brundrick, 1996; 10 items, e.g., “I am still learning;” 1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Trust

The Trust scale was used from the Cattell’s 16 Personality Factor questionnaire (Cattell, 1956; $n = 10$ items, e.g., “I think that all will be well;” 1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Health Measures

Health was assessed in terms of physical and mental health.

Physical Health Status

Physical health status was measured using seven basic health items, all using Likert-type scales. Three items assessed health in the last month (e.g., “In the past month I have felt physically unwell;” 1 = *Almost Never*, 5 = *Almost Always*), one item rating their current health (1 = *Bad*, 5 = *Excellent*), one item reporting health history (1 = *I have more than one major disease for which I take medication*, 7 = *It has always been excellent*), and one item each comparing current health status to previous health status and to the health status to those of others their age (1 = *Worse*, 3 = *Better*). Since these seven items used differing scale points, each item was standardized, and a mean score was computed using z scores to form a “physical health status” score ($\alpha = .82$) with higher scores indicating better health status.

Physical Health Behavior

Five items assessed negative impacts of health; one item each regarding the frequency of clinic visits (1 = *Never*, 6 = *More than once a month*), hospitalizations in the past year (1 = *No*, 3 = *Yes, 3 or more times*), prescription drug usage (1 = *none*, 5 = *eleven or more*), and over the counter medication usage (1 = *I almost never use nonprescription medications*, 3 = *I use a lot of nonprescription medications*), and one item reporting perception of health status preventing participation in desired activity (1 = *not at all*, 3 = *to a great extent*). Since these five items were on different scales, each item was standardized, and a mean score was

computed using z scores to form a “Physical health behavior” score ($\alpha = .68$) with higher scores indicating more frequent health-related behavior.

Mental Health

Mental health was measured with the Inventory of Depression and Anxiety Symptoms (IDAS; Watson, Clark, & Tellegen, 1988; Watson et al., 2008). Participants rated the extent to which they experienced various feelings, sensations, or problems (e.g., “I felt depressed”) in the past two weeks (1 = *Not at all*, 5 = *Extremely*) for 11 subscales: General Depression, Anxiety, Dysphoria, Ill Temperament, Lassitude, Insomnia, Appetite Loss, Appetite Gain, Panic, Traumatic Intrusions, and Wellbeing. Suicidality was excluded due to IRB restrictions.

Results and Discussion

Unless otherwise noted, all analyses were conducted using SPSS Statistical Analysis Software. Summaries of means, standard deviations, and ranges are displayed in Table 2.2 and correlations, and Cronbach’s alphas are shown in Table 2.3.

Convergent Validity

To measure convergent validity, Pearson correlations among the BNSS subscales and existing measures of individual basic needs were examined. See Table 2.3. Correlations were in expected directions for each subscale, positive for Effectance and negative for Discouragement, providing evidence of convergent validity.

Predicting Health Outcomes

To the validity of BNSS in predicting health outcomes, Pearson correlations between BNSS subscales and physical and mental health were examined. See Table 2.4. Effectance was correlated positively with physical health status and mental wellbeing and negatively with physical health behavior and symptoms of mental illness. Conversely, Discouragement was correlated negatively with physical health status and mental wellbeing and positively with physical health behavior and mental illness. Discouragement was most strongly correlated with depression, and Effectance was most strongly correlated with wellbeing.

Table 2.2 Means, standard deviations, and ranges for study 1 variables

<i>Construct</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance	3.94 (0.60)	1.75	5.00
Discouragement	2.34 (0.85)	1.00	4.57
<i>Existing measures of basic needs</i>			
Emotional support	3.09 (0.73)	1.00	4.00
Instrumental support	3.13 (0.75)	1.00	4.00
Life engagement	3.79 (0.85)	1.00	5.00
Presence of life meaning	4.77 (1.47)	1.00	7.00
Satisfaction with life	4.41 (1.65)	1.00	7.00
Independent goal attainment	3.92 (0.57)	1.88	5.00
Competence	3.69 (0.76)	1.10	5.00
Personal control	4.98 (0.96)	2.40	7.00
Interpersonal control	4.63 (1.06)	1.3	7.00
Self-actualization	3.82 (0.68)	1.10	5.00
Trust	3.42 (0.80)	1.00	5.00
<i>Physical and mental health</i>			
Physical health status	0.00 (0.75)	-1.93	1.46
Physical health behavior	0.00 (0.61)	-0.74	1.98
Depression	2.01 (0.72)	1.00	4.28
Anxiety	1.76 (0.91)	1.00	5.00
Dysphoria	1.82 (0.81)	1.00	4.70
Ill temperament	1.54 (0.71)	1.00	4.80
Lassitude	1.98 (0.84)	1.00	4.50
Insomnia	1.96 (0.83)	1.00	4.33
Appetite loss	1.55 (0.78)	1.00	5.00
Appetite gain	1.91 (0.90)	1.00	5.00
Panic	1.43 (0.61)	1.00	4.00
Traumatic intrusions	1.67 (0.87)	1.00	5.00
Wellbeing	2.92 (0.92)	1.00	5.00

Note N=227

These correlations support previous findings that satisfaction of each basic need, individually, related to physical and mental health (see prior review). Furthermore, these findings suggest that comprehensive need satisfaction can be used as a predictor of health and wellbeing outcomes.

The first study provided convergent evidence for the validation and usefulness of the BNSS subscales. In the next study, we wanted to compare the power of the BNSS subscales in predicting health outcomes.

Table 2.3 Study 1 correlations and Cronbach's alphas for BNSS subscales and existing measures of basic needs

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Efficence	(.91)												
2. Discouragement	-.68**	(.90)											
3. Emotional support	.73**	-.64**	(.91)										
4. Instrumental support	.73**	-.62**	.91**	(.91)									
5. Life engagement	.65**	-.75**	.58**	.58**	(.89)								
6. Presence of life meaning	.55**	-.63**	.53**	.53**	.73**	(.92)							
7. Satisfaction with life	.54**	-.69**	.55**	.54**	.61**	.60**	(.92)						
8. Independent goal attainment	.42**	-.29**	.27**	.24**	.40**	.28**	.19**	(.85)					
9. Competence	.58**	-.69**	.49**	.45**	.71**	.59**	.58**	.49**	(.90)				
10. Personal control	.61**	-.67**	.51**	.51**	.69**	.53**	.56**	.47**	.76**	(.82)			
11. Interpersonal control	.61**	-.66**	.59**	.55**	.59**	.59**	.56**	.38**	.66**	.65**	(.86)		
12. Self-actualization	.72**	-.74**	.64**	.63**	.76**	.65**	.64**	.49**	.76**	.77**	.65**	(.85)	
13. Trust	.46**	-.46**	.43**	.44**	.34**	.35**	.38**	.13	.34**	.32**	.51**	.43**	(.93)

Note N=227. ** $p < 0.01$. Cronbach's alphas appear on the diagonal in parantheses

Table 2.4 Study 1 correlations and Cronbach's alphas for BNSS subscales (effectance, discouragement) and measures of physical and mental health

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Effectance (.91)															
2. Discouragement (.90)	-.68**														
3. Physical health status (.80)	.24**	-.36**													
4. Physical health behavior (.59)	-.17**	.20**	-.66**												
5. Depression (.92)	-.51**	.71**	-.51**	.35**											
6. Anxiety (.89)	-.40**	.53**	-.34**	.23**	.78**										
7. Dysphoria (.92)	-.49**	.70**	-.45**	.30**	.96**	.81**									
8. Ill temperament (.87)	-.39**	.46**	-.27**	.23**	.66**	.58**	.68**								
9. Lassitude (.85)	-.33**	.52**	-.45**	.35**	.81**	.67**	.75**	.56**							
10. Insomnia (.86)	-.22**	.38**	-.34**	.27**	.71**	.55**	.61**	.49**	.60**						
11. Appetite loss (.88)	-.29**	.33**	-.15**	.16**	.54**	.38**	.48**	.44**	.37**	.50**					
12. Appetite gain (.76)	-.22**	.29**	-.18**	.13**	.42**	.46**	.47**	.35**	.48**	.30**	.03**				
13. Panic (.89)	-.39**	.46**	-.32**	.26**	.74**	.72**	.75**	.67**	.62**	.62**	.55**	.41**			
14. Traumatic intrusions (.88)	-.38**	.52**	-.35**	.28**	.78**	.67**	.78**	.61**	.63**	.57**	.53**	.30**	.69**		
15. Wellbeing (.89)	.61**	-.70**	.39**	-.16**	-.56**	-.32**	-.48**	-.22**	-.38**	-.27**	-.08**	-.15**	-.23**	-.30**	

Note $N=227$. ** $p<0.01$. Physical health status and behavior were calculated by standardizing seven and five items, respectively. Cronbach's alphas appear on the diagonal

STUDY 2

The purpose of Study 2 was to further examine convergent validity with measures that evaluate thwarting of, or lack of, individual basic needs, as well as to establish divergent validity. The aim was also to further investigate the role of basic needs satisfaction as a predictor of physical health and mental wellbeing beyond demographics (i.e., age, sex, ethnicity, income, and social status) by using hierarchical linear regression.

Method

Participants and General Procedure

Following the same approval and design procedures as in Study 1, a general population sample of 350 USA adults was recruited and paid through Amazon Mechanical Turk. Participation took about 40 min on average. Thirty-seven participants with incomplete data and a single univariate outlier were excluded, resulting in a final sample of 312 participants (47.1% men; $M_{age}=37.90$, $SD=12.26$ years; 80.8% White/European American; with yearly income well distributed).

Measures

Again, all measures were self-report. Unless otherwise specified, composite scores were created by averaging the items. Reliability estimates are included in the results section.

Basic Needs Satisfaction Survey

We used the BNSS measure confirmed in Study 1 but shortened its two subscales, Effectance ($n=9$; $\alpha=.88$) and Discouragement ($n=7$; $\alpha=.88$).

Thwarting Measures

Belongingness

The Interpersonal Needs Questionnaire (Van Orden, Cukrowicz, Witte, & Joiner, 2012) evaluates thwarted belongingness (10 items, e.g., “I feel unwelcome in most social situations;” 1 = *Absolutely untrue*, 7 = *Absolutely True*).

Understanding

The Purpose in Life Test (Crumbaugh, 1968) measured individuals' experience of meaning and purpose in life (20 items, e.g., "In life I have..."), using a 5-point Likert-type scale. The response scale varied for each question (e.g., "In life I have..." 1 = *No goals or aims*, 5 = *Clear goals and aims*). Low scores indicate a lack of life understanding.

Control

The Mastery Scale (Pearlin & Schooler, 1978) assessed perceived lack of control (six items, e.g., "I have little control over the things that happen to me"), using a 4-point Likert-type scale (1 = *Strongly Agree*, 4 = *Strongly Disagree*). Low scores indicate perceived lack of control.

Self-Enhancement

The revised-negative version of the Rosenberg Self Esteem Scale (Greenberger, Chen, Dmitrieva, & Farruggia, 2003) evaluated lack of self enhancement (10 items, e.g., "At times I think I am no good at all;" 1 = *Strongly Disagree*, 6 = *Strongly Agree*).

Trust

To measure interpersonal distrust, the Distrust subscale of the International Personality Item Pool (Goldberg et al., 2006; 10 items, e.g., "I distrust people;" 1 = *Very inaccurate*, 5 = *Very accurate*) was used.

Divergent Measures

These measures were selected based on the prediction that they would measure something distinct from basic psychosocial needs.

Basic Economic Needs

Participants rated their financial situation in terms of their ability to meet basic needs, using a 5-point Likert-type scale (1 = *We often lack enough money for basic needs*, 5 = *We have far enough money both for basic needs and for our desires*).

Social Desirability

Social desirability was evaluated using the shortened Marlowe–Crowne Social Desirability Scale (Crowne & Marlow, 1964; eight items, e.g., "Are you quick to admit making a mistake?") with a 3-point Likert-type response scale (1 = *No*, 2 = *Don't know*, 3 = *Yes*).

Personality

The HEXACO-60 (Ashton & Lee, 2009) measures six major dimensions of personality, the big-five (Emotionality, Extraversion, Agreeableness, Conscientiousness and Openness) plus Honesty/Humility (e.g., “I would never accept a bribe, even if it were very large;” 10 items each; 1 = *Strongly Disagree*, 5 = *Strongly Agree*).

Physical and Mental Health

The basic physical health questions from Study 1 were used. For mental health, two subscales with the strongest correlations from Study 1 were used: Wellbeing and General Depression (i.e., without suicidality items) (IDAS; Watson et al., 2008).

Control Variables

Control variables used were sex, age, ethnicity (single-items), and socioeconomic status. Socioeconomic status was measured in terms of income and social status (i.e., education and occupation). A single item was used to assess the range of income that best matched the participant’s annual household income on a 6-point Likert-type scale (1 = *less than \$15,000*, 6 = *over \$100,000*). Social status (i.e., educational attainment and occupational prestige; not social class) was assessed using the Barratt Simplified Measure of Social Status (Barratt, 2006). Participants were asked to answer two questions about themselves, their parents, and their spouse (if married) regarding education and occupation. An overall social status score was computed following Barratt’s (2006) scoring guidelines, weighting education to occupation with a ratio of 3:5.

Results and Discussion

Unless otherwise noted, all analyses were conducted using SPSS Statistical Analysis Software. See Table 2.5 for means, standard deviations and ranges. See Table 2.6 for correlations.

Convergent Validity

To further measure convergent validity, Pearson correlations among the BNSS subscales and existing measures of basic needs thwarting were examined. See Table 2.6. As expected, measures selected to assess the lack of, or thwarting of, a given basic need (Cronbach alphas ranging from .88 to .95) correlated with Discouragement positively and

Table 2.5 Means, standard deviations, and ranges for study 2 variables

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance	3.94 (0.61)	1.13	5.00
Discouragement	2.29 (0.83)	1.00	5.00
<i>Basic needs thwarting</i>			
Thwarted belonging	2.87 (1.33)	1.00	7.00
Purpose in life	3.40 (0.71)	1.15	4.65
Mastery	2.70 (0.50)	1.00	4.00
Lack of self esteem	2.40 (1.28)	1.00	6.00
Distrust	2.77 (0.82)	1.00	5.00
<i>Divergent measures</i>			
Life effectance	3.94 (0.61)	1.13	5.00
Life discouragement	2.29 (0.83)	1.00	5.00
Economic basic needs	3.16 (0.92)	1.00	5.00
Social desirability	2.16 (0.57)	1.00	3.00
Honesty and humility	3.39 (0.71)	1.20	5.00
Emotionality	3.10 (0.66)	1.00	5.00
Extraversion	3.17 (0.80)	1.00	5.00
Agreeableness	3.30 (0.57)	1.40	5.00
Conscientiousness	3.73 (0.57)	1.50	5.00
Openness to experience	3.64 (0.65)	1.20	5.00
<i>Physical and mental health</i>			
Physical health status	0.00 (0.76)	-2.12	1.35
Physical health behavior	0.00 (0.66)	-0.72	2.26
Depression	2.08 (0.51)	1.39	3.78
Wellbeing	2.86 (0.98)	1.00	5.00

Note N=312

Table 2.6 Study 2 correlations for BNSS subscales and existing measures of basic needs thwarting

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Effectance	(.88)						
2. Discouragement	-.74**	(.88)					
3. Thwarted belonging	-.73**	.72**	(.94)				
4. Purpose in life	.72**	-.79**	-.71**	(.95)			
5. Mastery	.42**	-.58**	-.50**	.56**	(.88)		
6. Lack of self esteem	-.68**	.78**	.69**	-.75**	-.52**	(.95)	
7. Distrust	-.35**	.43**	.42**	-.37**	-.24**	.35**	(.92)

Note N=312. ** $p < 0.01$

with Effectance negatively (with the exception of the mastery and purpose in life scales, for which a low score indicate basic needs thwarting). Correlations were significant ($p < .05$) with absolute values from $r = .35$ to $r = .73$ for Effectance, and $r = .43$ to $r = .79$ for Discouragement. These results further support the convergent validity of the BNSS.

Divergent Validity

To measure divergent validity, correlations were examined among BNSS subscales and scales expected to measure constructs distinct from basic needs satisfaction: basic economic needs, social desirability, and personality traits (see Table 2.7). Although the BNSS subscales were significantly related to each of these constructs, they were only weakly correlated (i.e., $r < 0.4$) with most. The exceptions were extraversion, agreeableness and conscientiousness which were moderately correlated (i.e., $0.4 < r < 0.7$) with at least one of the BNSS subscales. It is not surprising that these constructs were still significantly related to basic needs satisfaction, given that basic psychosocial needs are fundamental and universal and are, therefore, expected to be related to a wide variety of outcomes. In particular, it makes sense that the BNSS subscales would be more highly correlated with extraversion, agreeableness, and conscientiousness because when one feels good, one is more likely to engage with others, which these three dimensions of personality measure (Aghababaei & Arji, 2014). These results, therefore, still provide some evidence of divergent validity.

Basic Needs and Physical and Mental Health in Adulthood

To measure the relationship among basic needs and physical and mental health in adulthood, Pearson correlations among the BNSS subscales and physical health status and behavior, mental wellbeing, and depression were examined. See Table 2.8. Correlations were significant ($p < 0.05$) and absolute values ranged from $r = .19$ to $r = .60$ for Effectance, and $r = .29$ to $r = .67$ for Discouragement, in expected directions. Findings were similar to Study 1, providing a replication. Greater basic needs satisfaction contemporaneously was significantly positively correlated with good health status and wellbeing and negative correlated with health behavior and depression. These results suggest that the lack of basic needs contributes to a stressful life experience which impacts health outcomes.

Table 2.7 Study 2 correlations and Cronbach's alphas for BNSS subscales (effectance, discouragement) and divergent measures

<i>Construct</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1. Efficance	(.88)									
2. Discouragement	-.71**	(.88)								
3. Economic basic needs	.24**	-.35**	-							
4. Social desirability	.18**	-.29**	.07	(.75)						
5. Honesty and humility	.15*	-.36**	.11	.41**	(.81)					
6. Emotionality	-.13	.21**	-.14*	-.07	<.01	(.78)				
7. Extraversion	.67**	-.67**	.20**	.22**	.11	-.30**	(.90)			
8. Agreeableness	.33**	-.39**	.12	.51**	.52**	-.09	.37**	(.81)		
9. Conscientiousness	.38**	-.40**	.11	.24**	.41**	-.05	.25**	.28**	(.77)	
10. Openness to experience	.24**	-.07	-.11	.01	-.01	.00	.17*	.16*	.27**	(.79)

Note $N=312$. * $p<0.05$, ** $p<0.01$. Cronbach's alphas appear on the diagonal. Economic basic needs is a single item

Table 2.8 Study 2 correlations and Cronbach's alphas for BNSS subscales (effectance, discouragement) and health/wellbeing outcomes

<i>Construct</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>
1. Effectance	(.88)					
2. Discouragement	-.74**	(.88)				
3. Physical health status	.33**	-.44**	(.82)			
4. Physical health behavior	-.19**	.29**	-.64**	(.68)		
5. Depression	-.41**	.60**	-.53**	.43**	(.83)	
6. Wellbeing	.60**	-.67**	-.44**	-.24**	-.41**	(.95)

Note $N=312$. ** $p<0.01$. Cronbach's alphas appear on the diagonal. Physical health status and behavior were calculated by standardizing and combining seven and five items, respectively

Those with higher scores on Effectance also had significantly higher scores on honesty/humility ($r=.15$), extraversion ($r=.67$), agreeableness ($r=.33$), conscientiousness ($r=.38$), openness to experience ($r=.24$). Higher Effectance scores were also positively correlated with social desirability ($r=.18$), suggesting that this measure may tap into positive attitudes. In contrast, higher scores on Discouragement were negatively correlated with honesty/humility ($r=-.36$), extraversion ($r=-.67$), agreeableness ($r=-.39$), and conscientiousness ($r=-.40$), as well as with social desirability ($r=-.29$). Higher Discouragement scores were correlated positively with emotionality ($r=.33$). That social desirability went in the same direction as basic needs satisfaction suggest that those with satisfaction may see life in a rosier, more relaxed manner, which facilitates cooperation that extraversion, agreeableness, conscientiousness, openness reflect. The only contrary finding to this speculation is that openness was unrelated to Discouragement.

To further explore these findings, a series of hierarchical regressions were conducted to investigate which BNSS subscale accounted for greater variance in predicting physical and mental health and whether this effect was beyond that due to control variables. To examine which subscale accounted for greater variance in predicting an outcome, we included Effectance and Discouragement in the first model. Then to assess whether the subscales still accounted for variance beyond control variables (i.e., sex, age, ethnicity, income, and social status), control variables were added in subsequent models. Hierarchical regressions were separately conducted for physical health behavior, physical health status (Table 2.9), depression, and wellbeing (Table 2.10).

Table 2.9 Hierarchical regression models predicting physical health status and behavior

<i>Physical health status</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.19 (.19)		36.36**
Effectance	.02	.10	.02			
Discouragement	-.39	.07	-.42**			
<i>Model 2</i>				.24 (.22)	.04	4.42**
Effectance	.01	.09	.01			
Discouragement	-.39	.07	-.43**			
Sex	-.16	.08	-.10*			
Age	-.01	<.01	-.15**			
Income	.05	<.01	.10			
Social status	<.01	.03	-.02			
<i>Model 3</i>				.25 (.23)	.01	4.10*
Effectance	.02	.09	.01			
Discouragement	-.36	.07	-.40**			
Sex	-.19	.08	-.12*			
Age	-.01	<.01	-.16*			
Income	.06	.03	.11*			
Social status	<.01	<.01	-.02			
Social desirability	.14	.07	.11*			
<i>Physical health behavior</i>						
<i>Model 1</i>				.09 (.08)		14.26**
Effectance	.06	.09	.05			
Discouragement	.26	.06	.33**			
<i>Model 2</i>				.13 (.11)	.04	3.78**
Effectance	.06	.09	.06			
Discouragement	.26	.06	.33**			
Sex	.18	.07	.14*			
Age	.01	<.01	.13*			
Income	-.04	.03	-.08			
Social status	<.01	<.01	.01			
<i>Model 3</i>				.13 (.11)	<.01	.56
Effectance	.06	.09	.06			
Discouragement	.27	.06	.34**			
Sex	.17	.07	.13*			
Age	.01	<.01	.12*			
Income	-.03	.03	-.08			
Social status	<.01	<.01	.01			
Social desirability	.05	.07	.04			

Note N=312. * $p < 0.05$, ** $p < 0.01$

Table 2.10 Hierarchical regression models predicting wellbeing and depression

<i>Wellbeing</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.48 (.48)		141.80**
Effectance	.38	.10	.23**			
Discouragement	-.59	.08	-.50**			
<i>Model 2</i>				.48 (.47)	<.01	.35
Effectance	.37	.10	.23**			
Discouragement	-.60	.07	-.51**			
Sex	.01	.08	<.01			
Age	<.01	<.01	-.03			
Income	<.01	.03	<.01			
Social status	<.01	<.01	-.03			
<i>Model 3</i>				.49 (.48)	.01	7.46**
Effectance	.38	.10	.24**			
Discouragement	-.57	.07	-.48**			
Sex	-.04	.08	-.02			
Age	<.01	<.01	-.04			
Income	<.01	.03	<.01			
Social status	<.0	<.01	-.03			
Social desirability	.20	.08	.12**			
<i>Depression</i>						
<i>Model 1</i>				.36 (.36)		87.97**
Effectance history	.06	.06	.07			
Discouragement	.40	.04	.65**			
<i>Model 2</i>				.39 (.37)	.02	2.93*
Effectance	.05	.06	.06			
Discouragement	.39	.04	.64**			
Sex	.13	.05	.13**			
Age	<.01	<.01	-.08			
Income	-.02	.02	-.05			
Social status	<.01	<.01	.01			
<i>Model 3</i>				.39 (.38)	<.01	3.59
Effectance	.04	.06	.05			
Discouragement	.38	.04	.62**			
Sex	.15	.05	.14**			
Age	<.01	<.01	-.07			
Income	-.02	.02	-.06			
Social status	<.01	<.01	.01			
Social desirability	-.08	.04	-.09			

Note *N*=312. **p*<0.05, ***p*<0.01

In the regression predicting *physical health status*, although Effectance had been significantly correlated with each of the physical and mental health outcomes, Discouragement consumed the variance for physical health status, accounting for 19% of the variance, whereas Effectance was not a significant predictor (see Table 2.9). When adding the demographic control variables in model 2, age contributed to variance explained (22%). Age was negatively related to physical health status, suggesting that those who were older reported a poorer physical health status. Last, adding social desirability also significantly added to the variance explained (23%), and social desirability was positively related to reporting physical health status. When all variables were included, Discouragement was still the strongest predictor of physical health status, which can be seen by the standardized beta. This suggests that when an individual felt like their current needs were not fulfilled, they were likely to poorer report physical health status, and this effect was above and beyond that found by demographic factors that often contribute to health outcomes.

In the regression predicting *physical health behavior*, again Discouragement consumed the variance for physical health behavior, accounting for 8% of the variance, whereas Effectance was not a significant predictor (see Table 2.9). When adding the demographic control variables in model 2, sex and age contributed to variance explained (11%). Age was positively related to physical health behavior, suggesting that those who were older reported more frequent physical health behaviors. Sex was related such that women reported more frequent physical health behaviors. Last, adding social desirability did not significantly add to the variance explained. When all variables were included, Discouragement was still the strongest predictor of physical health behavior, which can be seen by the standardized beta. This suggests that when an individual felt like their current needs were not fulfilled, they were likely to report more instances of physical health behaviors including hospital visits and medications, and this effect was above and beyond that found by demographic factors that often contribute to health outcomes.

In the regression predicting *wellbeing*, both Effectance and Discouragement significantly contributed to variance for wellbeing (48%; see Table 2.10). None of the demographic control variables added in model 2 were significant and the variance explained went down slightly. In model 3, adding social desirability added to the variance explained

(48%). When all variables were included, Discouragement was still the strongest predictor of wellbeing, which can be seen by examining the standardized beta. This suggests that when an individual felt like their current needs were not fulfilled, they were less likely to have high scores on wellbeing, and this effect was above and beyond that found by examining demographic factors that often contribute to mental health outcomes.

In the regression predicting *depression*, although both Effectance and Discouragement were significantly correlated to depression, only Discouragement significantly contributed to variance for depression (36%; see Table 2.10). When adding demographics in model 2, only sex significantly contributed to variance explained (37%), with women reporting higher depression. Last, adding social desirability did not significantly add to the variance explained. When all variables were included, Discouragement was still the strongest predictor of depression, which can be seen by examining the standardized beta. This suggests that when an individual felt like their current needs were not fulfilled, they were likely to report higher depression, and this effect was above and beyond that found by examining demographic factors that often contribute to mental health outcomes.

Although Effectance was significantly correlated with each of the physical and mental health outcomes, Discouragement consumed the variance for all outcome variables save wellbeing, whereas Effectance remained significantly predictive. Discouragement remained significant for all four health outcomes even after considering demographic variables and social desirability. Sex was a significant predictor of physical health (good and poor) as well as depression (women worse off). Age was a significant predictor for physical health, with higher age associated with lower positive health and higher negative health.

Social desirability explained variance in physical health status and wellbeing, but not poor physical health or depression, suggesting that when people feel good (i.e., high Effectance), they may have a rosier outlook on their wellbeing ("Pollyanna effect;" Boucher & Osgood, 1969). Alternatively, it might be more socially desirable to report good physical and mental health.

Income was only an explanatory factor for physical health status when social desirability was also included in the model, and social status was not predictive in any model. This suggests that perhaps basic needs satisfaction may be a better predictor of both physical and mental health

than socioeconomics, despite the copious literature discussing the socioeconomic gradient in health (e.g., Adler & Ostrove, 1999; Adler et al., 1994). It is also of note that in the physical health and depression regressions, the explained variance did significantly increase when adding the demographic variables, but this effect was not seen in the wellbeing model. This perhaps suggests that the most robust factor contributing to mental wellbeing is basic psychosocial need fulfillment. Furthermore, these findings support the recent literature suggesting that psychosocial resources may be important predictors of health independent of SES-related stress (Matthews, Gallo, & Taylor, 2010).

GENERAL DISCUSSION

The purpose of the current studies was to validate a short, comprehensive measure of basic psychosocial needs satisfaction. Convergent validity was assessed using a battery of measures that evaluated each separate basic need. The role of basic needs satisfaction as a predictor of both physical and mental health was also investigated. Participants completed measures assessing physical and mental health.

Results from two studies demonstrated reliability and validity of the BNSS, with its two subscales performing in opposite manners. Discouragement predicted both physical and mental health; it was positively associated with physical health behavior and depression and negatively with physical health status and wellbeing, suggesting that lack of basic psychosocial needs, or basic needs thwarting, predicts negative health outcomes. However, for wellbeing both subscales were predictive, suggesting that lack of discouragement is not enough for flourishing, but a sense of effectance is also required. These findings align with the World Health Organization's (1948) definition of health as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" and conform to prior research (Vansteenkiste & Ryan, 2013). Furthermore, the BNSS predicted health outcomes independent of socioeconomic status, which has been clearly associated with both physical and mental health (Adler & Ostrove, 1999; Adler et al., 1994), supporting previous suggestions that psychosocial resources could be predictors of health on their own (Matthews et al., 2010).

Given the role of the BNSS as a significant predictor of health, there may be potential to use the BNSS and related basic needs theory to improve health behavior and promote mental wellbeing in clinical

contexts. Many studies have already demonstrated the utility of assessing basic needs for treatment interventions (e.g., self-determination theory; Markland, Ryan, Tobin, & Rollnick, 2005; Ng et al., 2012; Sheldon, Williams, & Joiner, 2008). A new measure of psychological well-being called the Comprehensive Inventory of Thriving (CIT) has yielded similar findings regarding the relationship with physical and mental health (Su, Tay, & Diener, 2014). Enhanced autonomous motivation and perceived competence, for example, have been shown to promote glycemic control (Williams, McGregor, Zeldman, Freedman, & Deci, 2004), lower plaque and gingivitis (Halvari & Halvari, 2006), and increase smoking cessation (Williams et al., 2006). Self-determination may also be related to mental health issues such as anxiety, eating, mood, and personality disorders (Sheldon et al., 2008). Given these findings, it may be worthwhile to use the short, comprehensive BNSS scale as a quick screen in a waiting room where results could be used to identify overall psychosocial need deficiencies that may be contributing to health issues. Subsequently, more detailed analyses could be conducted and interventions designed to remedy deficiencies.

LIMITATIONS AND FUTURE DIRECTIONS

The study had several limitations. First, the BNSS needs further development as it appears that a shortened scale might work just as well, as shown in study 2. Second, all studies used cross-sectional, convenience samples, so causation cannot be determined. A longitudinal study is needed to determine the direction of effects. Data were collected from the United States, so more diverse samples are needed. Also, because the data collected was self-reported, it is impossible to know for sure that the respondents were accurate and honest with their answers. Ideally, in future studies, accurate independent health records could be accessed to determine self-report accuracy. Future studies may also investigate whether certain life events predict basic needs satisfaction and explore the role of basic psychosocial needs fulfillment as a potential mediator between life events and health outcomes. For example, psychosocial needs may explain, at least partially, the mechanism underlying the relationship between childhood experiences and adult health.

CONCLUSION

A comprehensive basic needs satisfaction measure fills a gap in basic needs studies by providing a short self-report measure that evaluates the status of all five basic psychosocial needs outlined in Fiske's (2004) BUCET list. Such a measure has the potential to be applied to a wide array of psychological contexts in the future since basic needs are integral to human behavior and development. A comprehensive measure may be a useful tool for predicting not only physical and mental health but also other important life outcomes such as moral capacities.

Interestingly, each of the BUCET basic needs is fundamental in early life when the body and brain are being shaped. In the next chapter, we examine whether the timing of basic needs fulfillment is critical for long-term wellbeing. Specifically, we examine basic needs fulfillment in childhood and its relation to adult wellbeing.

NOTE

1. With purpose and life satisfaction comprising the BUCET variable "understanding" and control, competence, and autonomy comprising the BUCET variable "control."

APPENDIX 2.1: BASIC NEEDS SATISFACTION SCALE (BNSS)

Please indicate the extent to which you agree or disagree with each of the following statements.

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
1. People care about me	☐	☐	☐	☐	☐
2. I fit into at least one social group	☐	☐	☐	☐	☐
3. I feel like I have influence on those who are important in my life	☐	☐	☐	☐	☐
4. I can shape my world	☐	☐	☐	☐	☐
5. Other people value my skills	☐	☐	☐	☐	☐
6. In key areas in my life I can make choices that matter	☐	☐	☐	☐	☐

(continued)

(continued)

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
7. I trust that I can safely make my way in the world	☐	☐	☐	☐	☐
8. When necessary, I can find support that I need from others	☐	☐	☐	☐	☐
9. I have goals for my life	☐	☐	☐	☐	☐
10. I have opportunities in my life to improve my skills and talents	☐	☐	☐	☐	☐
11. Even though I may feel down sometimes, I know that things will improve	☐	☐	☐	☐	☐
12. I feel like I don't belong anywhere	☐	☐	☐	☐	☐
13. There is nothing I can do to change my life	☐	☐	☐	☐	☐
14. In key areas in my life, I feel incapable	☐	☐	☐	☐	☐
15. I feel boxed in with no freedom	☐	☐	☐	☐	☐
16. The world is a mean place so I have to be careful	☐	☐	☐	☐	☐
17. My life is meaningless	☐	☐	☐	☐	☐
18. I feel beaten down	☐	☐	☐	☐	☐
19. I am unhappy with my life	☐	☐	☐	☐	☐

SCORING

BNSS Effectance: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
BNSS Discouragement: 12, 13, 14, 15, 16, 17, 18, 19

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Basic Needs Satisfaction and Its Relation to Childhood Experience

Rebecca Noble, Angela Kurth and Darcia Narvaez

Abstract Humanity's evolutionary inheritances include many things beyond genes, such as self-organization and a developmental system for raising the young (evolved developmental niche or evolved nest). We present an evolutionary understanding of human species-typical and atypical development and need provision, as well as adult outcomes in species-typical contexts. Maslow noted that thwarting of basic needs fulfillment in early life has effects over the long term but he did not describe what a positive experience in early life looks like. We provide an evolutionary picture here. We describe the development of a retrospective basic needs fulfillment measure based on the Basic Needs Satisfaction Survey whose validation was described in Chapter 2. We tested the usefulness of basic

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needs history against an existing measure of evolved developmental niche history which were highly correlated in two studies. Hierarchical regression indicated that the measure Basic Needs History explained more of the variance than Evolved Developmental Niche History.

Keywords Basic needs · Evolved developmental niche · Early experience · Evolution · Health

Basic needs research has focused primarily on grown individuals. Although when Abraham Maslow introduced the idea of basic needs to psychology he had intuitions about the basic needs of young children, he did not specify what those needs look like. And, although he displayed some inkling of human evolutionary inheritance, he did not have a full grasp of what that looks like either. For example, as mammals, a baby's physiological, safety and love needs are inseparable and self-esteem is shaped by the caregivers and caregiving environment from the beginning of life. In this chapter, we zero in on early experience, briefly describing the expansion of basic needs theory in terms of humanity's evolutionary heritage.

The basic needs identified by Maslow (1970) include physiological needs (e.g., food, water), safety needs (e.g., protection, stability), belonging and love needs (e.g., affectionate relationships), esteem needs (e.g., competence, mastery, self-esteem), and self-actualization (the fulfillment of one's own nature). Researchers have shaped a set of common measures that are epitomized by Susan Fiske's (2004) BUCET list. BUCET stands for belonging needs, understanding (meaning, purpose), control (which includes mastery, competence), self-enhancement (which includes self-actualization), and trust (a sense of benevolence from the world). In Chapter 2, we described the development and validation of the Basic Needs Satisfaction Survey (BNSS) to measure the BUCET list as a whole. In this chapter, we discuss the extension of that measure into childhood recollection and compare it to another measure of basic needs fulfillment based on humanity's evolutionary history.

BACK TO CHILDHOOD

Like most of psychology, Maslow (1970) focused on needs and outcomes at the adult level. Little attention was drawn to how basic needs can be met in early life, what they are specifically, and their long-term

effects. Because of the dominance of psychoanalysis and its study of neuroticism at the time, Maslow did note the relationship between neuroticism and early experience:

Most neurotic symptoms or trends amount to basic-need-gratification-bent impulses that have somehow got stymied or misdirected or confused with other needs or fixated on the wrong means. Other symptoms, however, are no longer gratification-bent but are simply protective or defensive. They have no goal but to prevent further hurt or threat or frustration. (Maslow, 1954, p. 30)

In fact, Freud ascribed neuroticism to every human being, due to the uncontrollable nature of (his idea of) the Id. Freud described the Id as a “cauldron of seething excitement” that has no organization or “unified will” where “contradictory impulses exist side by side without neutralizing each other or drawing apart” and instead “combine in compromise formations under the overpowering economic pressure towards discharging their energy...instinctual cathexes seeking discharge—that, in our view is all that the id contains” (Freud, 1933, pp. 103–105). He argued that the Id’s innate impulses could only be contained by a strong ego under the direction of a superego (the internalization of civilization via parental direction). To the ears of developmental psychologists attuned to the evolutionary needs of a young children (described below), Freud’s description sounds like the results of a baby untouched and frustrated, whose whole system has become largely dysregulated.

Maslow and others at the time were bowing to Freudian psychoanalysis as having covered the territory of early experience, especially since psychoanalysis linked patients’ neuroticism to early experience. The Freudians and the humanistic psychologists agreed that early life experience played a role in neuroticism, the anxiety produced by early psychic trauma that produces defenses (the part of Freud’s theory that has been corroborated by research, unlike his emphasis on sexual causes; see Sletvold, 2016). Ego psychologists, taking the relational turn, began to point to responsive aspects of interaction and experience between mother and child (e.g., Winnicott’s, 1957, advocacy that good-enough mothering entailed yielding to the child’s “omnipotence”). However, none of these psychologists specified the type of early care that humans as a species evolved to expect other than general responsiveness (Cassidy, Jones, & Shaver, 2013).

The lack of basic needs provision is a form of stress that leads to ill health and illbeing—“crippled spirits” (Maslow, 1970, p. 33). We examine next what early stress does to a child.

EARLY LIFE STRESS

Maslow, along with psychoanalysts of the time, thought that the illness of self-deprecation resided in the unconscious. We now know that it is much more deeply neurobiological, and it starts in early life. For example, the stress response system must be protected from either overheating or collapsing due to challenges the young child’s brain and body are not yet ready to handle (Niehoff, 1999) and systems like the oxytocin-ergic endocrine system can be under- or mis-developed (McLaughlin, Sheridan, & Nelson, 2017).

There is increasing concern about the long-term effects of early stress, naming it “toxic” (Shonkoff et al., 2012; Young-Bruehl, 2012). Here is a sampling of research findings about early life stress. If, for example, a baby is left to cry for a length of time, several detrimental outcomes occur. His brain is flooded with high levels of toxic stress hormones that eventually kill neuronal connections (Blunt Bugental, Martorell, & Barraza, 2003; Gunnar & Donzella, 2002). Pain circuits are activated and opioids, which otherwise promote feelings of wellbeing, diminish (Eisenberger, Lieberman, & Williams, 2003; Panksepp, 2003; Zubieta et al., 2003). In reaction to nonresponsive care, the baby may shut down emotional expression, making it seem as if he is fine when cortisol readings indicate he is not (Hertsgaard, Gunnar, Erikson, & Nachmias, 1995; Middlemiss, Granger, Goldberg, & Nathans, 2012; Perry, Pollard, Blakely, Baker, & Vigilante, 1995). Animal studies show that ongoing experiences of grief (e.g., from physical isolation) set up conditions for chronic mood disorders (Watt & Panksepp, 2009) and a fear-generating environment can lead to anxiety disorders in later life (Adamec, Shallow, & Budgell, 1997). Unrelieved distress in early life influences the genetic expression of a key neurotransmitter, gamma-aminobutyric acid (GABA), leading to anxiety and depression disorders as well as the use of alcohol for stress relief (Caldji, Francis, Sharma, Plotsky, & Meaney, 2000; Hsu et al., 2003). Finally, the stress response systems can be wired permanently for oversensitivity, leading to predispositions for depression and anxiety, poor mental and physical health outcomes, and accelerated aging and mortality (Anisman, Zaharia, Meaney, & Merali, 1998; de Kloet,

Sibug, Helmerhorst, & Schmidt, 2005; Plotsky, Owens, & Nemeroff, 1998; Preston & de Waal, 2002).

When a dysregulatory response becomes chronic, it forms the foundation for further psychopathologies (Cole, Michel, & Teti, 1994). Chronic early stress or trauma increases the amygdala's capacity to learn and express fear associations and decreases the capacity of the prefrontal cortex to control it, creating a vicious cycle that escalates fear and anxiety, spiraling into more stress and dysregulation. Toxic stress can increase glucocorticoids, causing cell death in the limbic system's affective centers and thereby create abnormalities in emotion circuitry (Benes, 1994; DeKosky, Nonneman, & Scheff, 1982; Kathol, Jaeckle, Lopez, & Meller, 1989). High reactivity (linked to greater activation in the right prefrontal cortex) in early life is likely to become a part of personality, setting up the body for lifelong hyperreactive stress response, greater symptoms of anxiety or depression and less happiness (Davis & Sandman, 2010; Kagan & Snidman, 2004; Lupien, McEwen, Gunnar, & Heim, 2009). Emotion dysregulation in early life is related to subsequent mental illness, including a propensity for violence (Davidson, Putnam, & Larson, 2000; Davidson & Slagter, 2000).

This quick review provides a sense that early stress is detrimental for the short and long term. But can we identify what children actually *need* to receive in early life, beyond generalities of “responsiveness”? Yes, our evolutionary heritage provides clues.

EVOLUTIONARY BASELINES

Humanity's evolutionary history shaped basic needs. Humans are a special kind of social mammal—one that is co-constructed extensively after birth. From the perspective of evolution and our animal nature, some of Maslow's distinctions among basic needs are artificial—separating physiological from belonging needs does not match our mammalian nature. Mammals grow best when they feel safe in relational communion (love) which starts with mother and then extends to others; esteem needs are part of growing as an effective creature (Schor, 2003a, 2003b). So, Maslow's list of basic needs is less a hierarchy than a set of components.

Where can we get baselines for species-typical needs? We must look at our evolutionary history. It is often assumed that human evolution is gene-centric and oriented to selfishness (Dawkins, 1976). But there are other evolutionary theories. To establish baselines for normal optimal

development, we must understand humanity's heritages and potential, and how evolution has brought about both needs and fulfillment of those needs. Humans inherit a number of things from their ancestors beyond genes, including basic needs. One theory that takes into account development is evolutionary systems theory (Oyama, Griffiths, & Gray, 2001). It notes a rich set of inheritances such as culture, ecology, self-organization, and a developmental system. Each animal self-organizes its own development based on experience. And self-organization aims for fulfillment of the species' nature. We can see this more easily in plants. The burdened bonsai tree keeps aiming for the sun, breaking the strings tying it down. So, too, humans. Individuals grow in the ways that are allowed by their environments. Persons aim to fulfill themselves. They may get waylaid and thwarted, but the aims are still there. We think Maslow would have appreciated knowing about the inheritance of self-organization:

What if the organism is seen as having "biological wisdom"? If we learn to give it greater trust as autonomous, self-governing, and self-choosing, then clearly we as scientists, not to mention physicians, teachers, or even parents, must shift our image over to a more Taoistic one. ...asking rather than telling...nonintruding, noncontrolling...noninterfering observation rather than a controlling manipulation...receptive and passive rather than active and forceful. (Maslow, 1971, p. 15)

One of the most important inheritances from a psychological perspective is the developmental system for the young—the means by which the community satisfies basic needs and ensures that the offspring grows in a species-typical manner. Like all animals, humans evolved a nest or niche for their young that matches up with the maturational schedule of the offspring (Gottlieb, 2002). The human evolved developmental niche (EDN) adds a couple of features to the longstanding social mammalian nest that emerged over 30 million years ago. Humanity's EDN is particularly intensive because of the newborn's immaturity. Humans are born 9–18 months early compared to other animals and so should have minimal distress postnatally when physiological systems establish their parameters. The common characteristics of the EDN for babies and young children have been garnered from recurring patterns seen among small band hunter-gatherer communities around the world, which represent human society in prehistory or 99% of human genus existence (Hewlett & Lamb, 2005; Konner, 2005):

- Soothing perinatal experiences (e.g., no separation of mother and baby or imposed distress)
- Deep social support and positive climate for mother and child
- Responsiveness to needs, keeping baby distress to a minimum
- Affectionate touch: Lots of holding, carrying, rocking
- Extensive breastfeeding
- Allomothers, a “village” of multiple responsive adult caregivers (mother is not isolated or expected to care for the child on her own)
- Self-directed play in the natural world with multi-aged playmates

Taking evolution of species into account, then, we can consider evolved needs as basic needs. Each species has its set of needs for normal proper development so we can call them *species-expectant* needs. And when they are not met, it is toxically stressful, undermining health and well-being for the long term (note Harlow’s monkeys deprived of maternal touch, 1958).

Although some aspects of early life basic needs have been examined by psychologists, it has been limited. For example, we know that a mutually responsive relationship between mother and child leads to secure attachment and greater capacities for prosocial and cooperative behavior longitudinally (Eisenberg, 1995; Kochanska, 2002; Sroufe, Egeland, Carlson, & Collins, 2008; Zahn-Waxler & Radke-Yarrow, 1990). However, most other positive aspects of early experience (e.g., evolved niche) are in the early stages of study. Nevertheless, neurobiological studies demonstrate the effects of evolved niche components on human functioning and disposition. Here are a few examples of a growing literature. Regarding *touch*, skin to skin contact at birth facilitates the release of oxytocin in mother and infant, reducing childbirth stress (Bystrova et al., 2003). Keeping mother and child together after birth leads to greater child self-regulation a year later (Bystrova et al., 2009). Harry Harlow (1958) studied the effects of maternal *touch* deprivation on mammalian brains (monkeys), finding longlasting effects on self-regulation and sociality. Further studies in humans indicate that maternal *touch* decreases cortisol release, which otherwise benefits the immune system as cortisol kills immune cells (Field & Hernandez-Reif, 2013). A lack of *breastfeeding* in the first week of life is related to greater depression and withdrawal as well

as abnormal reflexes (Hart et al. 2003). *Allomothers* are critical supports for promoting mother's responsive attention to her child (Hrdy, 2009). *Self-directed play* fosters the growth in the orbitofrontal cortex and its linkages to other parts of the brain in mammals, which take a large role in decision-making (Pellis & Pellis, 2009). For longer reviews, see Narvaez, Panksepp, Schore, and Gleason (2013). An adult measure of the evolved developmental niche in childhood has been associated with mental health, sociality and morality (Narvaez, Wang, & Cheng, 2016).

Lack of the evolved developmental system is described as undercare (Narvaez, 2014). Undercare is stressful, representing toxic early stress. On the other hand, good early care influences synaptogenesis and neuroplasticity—aspects of a well-functioning brain so that when early care is appropriate, these features are enhanced (e.g., increased hippocampal NMDA subunit mRNA expression; Bredy, Grant, Champagne, & Meaney, 2003; Bredy, Zhang, Grant, Diorio, & Meaney, 2004).

CURRENT STUDIES

Maslow did not focus on what is necessary to develop a healthy, non-neurotic child but that is what we are examining in our lab generally. We are testing the importance of the EDN, which appears to be necessary for optimal development (for example, see prior publications: Narvaez & Gleason, 2013; Narvaez, Gleason et al., 2013; Narvaez, Gleason, Lefever, Wang, & Cheng, 2016; Narvaez, Wang, Gleason, Cheng, Lefever, & Deng, 2013).

Much of current literature regarding childhood experience has focused on the influence of negative experiences and the effects on physical health later in life. For example, the Adverse Childhood Experiences Study (ACEs; Felitti & Anda, 2005) conducted assessments among Kaiser Permanente clients, evaluating types of childhood trauma, and found that the more types of adversity experienced, the worse were adult health outcomes. Studies of other samples found similar outcomes (e.g., Anda et al., 2006). We wanted to compare the effects of ACEs with basic needs satisfaction on health outcomes. But first, we wanted to examine the effects of early experience as measured by the EDN. Does the presence of EDN components or their lack influence health outcomes?

STUDY 1

Method

Participants and General Procedure

A general population sample of 400 adults from the United States was recruited and paid through Amazon Mechanical Turk. Individuals were electronically provided with an explanation of the study, a consent form, and the study measures. All study measures were compiled into a survey that was administered in a single online session using Qualtrics. Those who decided to participate were paid about \$4.50 per hour for their completion of the survey, which took on average approximately 40 minutes. The final sample consisted of 374 of the recruited participants who successfully completed the survey (excluding those who did not finish the survey, or who spent fewer than 15 minutes answering the question). For the final sample ($n=374$; 52.1% male) participants ranged in age from 18 to 81 ($M_{\text{age}}=33.96$, $SD=11.07$). The racial/ethnic composition of the sample was as follows: 77.8% White, 8.0% African American, 10.4% Asian, 4.8% Hispanic/Latino, 1.6% Native American, 0.3% immigrant, 0.3% other. Yearly income varied substantially; 10.2% reported less than \$15K per year, 23.8% reported \$15–30K, 27.5% reported \$30–50K, 19.5% reported \$50–75K, 11.0% reported \$75–100K, and 8.0% reported over \$100K.

Measures

Unless otherwise noted, mean composite scores were computed for analysis.

Basic Needs

We used the BNSS (described in Chapter 2), which has two subscales: Effectance (11 items, e.g., “People care about me”; $\alpha=.87$) and Discouragement (8 items, e.g., “My life is meaningless”; $\alpha=.88$) using a Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). High scores indicated higher agreement toward each construct.

Evolved Developmental Niche

Early developmental environment was assessed using the Evolved Developmental Niche History measure (EDNh) measure (EDNh; Narvaez, Wang, & Cheng, 2016), a self-report measure of adult

recollections of frequency of experiences in childhood (before age 18). We included eight factors. (1) Two items measured touch: *affectionate touch* (physical positive touch such as hugs and kisses) and *corporal punishment* (hit, spanked, slapped, pinched), using a 5-point Likert-type scale (1 = *never*, 5 = *very often*); (2) three items assessed a *responsive social environment* score (happy, supportive, needs met; 5-point Likert-type scale: 1 = *very little, or not at all*, 5 = *very much*; $\alpha = .92$); (3) two questions addressed *self-directed play*: free play outside, and free play inside (5-point Likert-type scale: 1 = *never*, 5 = *very often*) ($r = .59$); (4) *social embeddedness* was measured with two items (doing things together as a family outside the home and inside the home, respectively) ($r = .62$), using a 5-point Likert-type scale (1 = *less than yearly*, 5 = *every day*); (5) to measure social support as *positive home climate*, participants rated the frequency of four positive emotions experienced (joy, expansiveness, self-assurance, and serenity; $\alpha = .88$; 6-point Likert-type scale: 1 = *don't recall*, 6 = *always or almost always*); (6) With the same response scale, *negative home climate* was measured by asking participants to rate the frequency of four sets of positive emotions experienced (grief, humiliation, guilt, fear, anger, and numbness; $\alpha = .90$). A EDNh composite score was also computed which weights and combines these items to form an overall score reflecting the childhood environment. See Narvaez, Wang, and Cheng (2016) for scoring formula.

Health Measures

To assess the relation between Basic Needs History (BNh) and health, we collected measures of physical health.

Physical Health Status

Physical health status was measured using seven basic health items, all using Likert-type scales. Three items assessed health in the last month (e.g., "In the past month I have felt physically unwell"; 1 = *Almost Never*, 5 = *Almost Always*), one item rating their current health (1 = *Bad*, 5 = *Excellent*), one item reporting health history (1 = *I have more than one major disease for which I take medication*, 7 = *It has always been excellent*), and one item each comparing current health status to previous health status and to the health status to those of others their age (1 = *Worse*, 3 = *Better*). Since these seven items used differing scale points, each item was standardized, and a mean score was computed using *z* scores to form a "physical health status" score ($\alpha = .82$), which high scores indicating better health status.

Physical Health Behavior

Five items assessed behaviors related to negative impacts of health; one item each regarding the frequency of clinic visits (1 = *Never*, 6 = *More than once a month*), hospitalizations in the past year (1 = *No*, 3 = *Yes, 3 or more times*), prescription drug usage (1 = *none*, 5 = *eleven or more*), and over the counter medication usage (1 = *I almost never use nonprescription medications*, 3 = *I use a lot of nonprescription medications*), and one item reporting perception of health status preventing participation in desired activity (1 = *not at all*, 3 = *to a great extent*). Since these five items were on different scales, each item was standardized, and a mean score was computed using *z* scores to form a “physical health behavior” score ($\alpha = .68$) which higher scores indicating more frequent health-related behavior.

Results and Discussion

Descriptive statistics are shown in Table 3.1. Correlations are shown in Table 3.2.

One variable was left out of the means tables and analyses. We asked participants whether they were breastfed and 90 (24.1%) said they did not know. Breastfeeding experience was not significantly related to

Table 3.1 Study 1 means, standard deviations, minimum, and maximum for basic needs satisfaction (effectance, discouragement) Evolved Developmental Niche history (EDNh) subscales and physical health measures

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance	3.88 (0.65)	1.45	5.00
Discouragement	2.18 (0.88)	1.00	5.00
Affectionate touch	3.24 (1.17)	1.00	5.00
Corporal punishment	2.60 (1.13)	1.00	5.00
Responsive social environment	3.62 (0.95))	1.00	5.00
Self-directed play	3.72 (0.95)	1.00	5.00
Social embeddedness	2.38 (0.95)	1.00	5.00
Negative home climate	2.79 (1.00)	1.00	6.00
Positive home climate	4.05 (1.12)	1.00	6.00
EDNh composite	3.41 (0.95)	1.11	4.70
Physical health status	0.00 (3.22) ^a	−9.77	6.69
Physical health behavior	0.00 (3.23) ^a	−3.76	12.22

Note *N* = 374

^aPhysical health status and physical health behavior were calculated by standardizing seven and five items, respectively

Table 3.2 Study 1 correlations among BNSS (effectance, discouragement), Evolved Developmental Niche history (EDNh) subscales, and physical health measures

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Effectance	—										
2. Discouragement	-.73**	—									
3. Affectionate touch	.21**	-.22**	—								
4. Corporal punishment	-.14**	.19**	-.20**	—							
5. Responsive social environment	.29**	-.29**	.63**	-.42**	—						
6. Self-directed play	.20**	-.14**	.39**	-.09	.34**	—					
7. Social embeddedness	.20**	-.21**	.42**	-.24**	.43**	.31**	—				
8. Negative home climate	-.24**	.30**	-.37**	.47**	-.70**	-.22**	-.31**	—			
9. Positive home climate	.38**	-.32**	.51**	-.33**	.75**	.39**	.43**	-.57**	—		
10. EDNh composite	.33**	-.34**	.73**	-.58**	.88**	.53**	.63**	-.73**	.81**	—	
11. Physical health status	.24**	-.29**	-.06	-.13*	.18**	.05	.05	-.19**	.16**	.14**	—
12. Physical health behavior	-.18**	.17**	.08	.12*	-.12*	-.01	-.03	.18**	-.15**	-.11*	-.56**

Note N = 374. * $p < 0.05$, ** $p < 0.01$

the two subscales of basic needs (Effectance: $r = .08$; Discouragement: $r = -.04$) nor to the health variables (good physical health: $r = .08$, poor physical health: $r = -.05$). As a result, we did not include this variable in the analyses.

Table 3.2 displays correlations among the BNSS, EDNh variables, and the health measures. These correlations provide validation and evidence of the relation between childhood needs fulfillment and physical health. The correlations showed that a responsive social environment was positively related to physical health status and negatively related to physical health behavior, suggesting that a responsive environment may have positive health implications. Affectionate touch provision did not relate to physical health, however, the experience of corporal punishment was negatively related to good physical health and positively related to poor physical health, suggesting that corporal punishment has detrimental health effects. Self-directed play experience and social embeddedness in childhood did not relate to health in adulthood. Further, the correlations showed that negative climate was related negatively to health status and positively to physical health behavior, while positive climate had the opposite relations. The composite childhood variable, EDNh, was also related to physical health, such that it was positively related with physical health status and negatively associated with physical health behavior. In all, these results suggest that fulfillment of childhood needs positively relates to good health status, particularly in the cases of responsive environment and positive climate, while lack of childhood needs fulfillment relates to poor health status and more frequent health treatment behavior, particularly in the case of corporal punishment and negative climate. It seems that the lack of fulfillment of childhood needs represents a stressful childhood experience, while fulfillment of childhood needs is likely to be indicative of less stressful experiences. Additionally, while self-directed play, social embeddedness, and positive touch were not related on their own, they were included in the significantly related composite childhood variable. This may suggest that the components on their own may not individually contribute to health, but an overarching consistently supportive environment may be most beneficial.

Based on previous research indicating a relationship between childhood experiences and health, and between basic needs satisfaction and health outcomes, in Chapter 2 we showed the usefulness of a basic needs self-assessment as a tool for understanding this relationship. As a next

step, we modified the wording and instructions for that tool, making it into a retrospective measure of basic needs satisfaction in childhood. We expected that scores on basic needs satisfaction in childhood would be related to better health scores in adulthood.

STUDY 2

Method

Participants and General Procedure

Following approval from the university's Institutional Review Board, we recruited a general population sample of 350 adults from the United States through Amazon Mechanical Turk. Participants took a survey online through Qualtrics and were paid about \$3.00 per hour, taking about 40 minutes on average. We excluded 37 participants with incomplete data plus one who did not take the task seriously, resulting in a final sample of 312 participants (47.1% male; ages 18–70 years; $M_{\text{age}} = 37.90$). Participants self-identified as the following: 80.8% Euro-American Caucasian, 10.9% African American, 4.8% Asian, 5.4% Hispanic/Latino, 1.3% Indian/Native American. Annual household income variability is as follows: 10.6% less than \$15,000; 17.3% \$15,000–\$30,000; 29.8% \$30,000–\$50,000; 20.8% \$50,000–\$75,000; 11.9% \$75,000–\$100,000; 9.6% over \$100,000. Participants were also asked to describe their financial situation in terms of affording basic needs (food, household bills): 6.4% said they often lacked enough money for basic needs; 13.5% sometimes lack enough money for basic needs; 40.7% said they have enough money for basic needs but could not afford extras; 36.5% said they have enough to afford basic needs and many extras; and 2.9% said they have far enough money for both basic needs and desires. A small portion (12.8%) of the sample were full-time students. Of those who were not full-time students, about half (49.3%) were married, and 62.5% had completed a college education or higher.

Measures

Participants completed measures regarding social desirability, childhood experience, measures to validate the new measure, and outcome measures.

Basic Needs History

To measure basic needs satisfaction during childhood, we asked participants to report on their experience during the first 18 years of their life in regard to our 19 basic psychosocial needs items. A Likert-type scale was used to assess the extent to which respondents agreed (1 = *strongly disagree*, 5 = *strongly agree*) with each statement during their childhood. Two subscales formed Effectance History (11 items, e.g., “I felt like I fit into at least one social group”; $\alpha = .95$) and Discouragement History (8 items, e.g., “I felt like there was nothing I could do to change my life”; $\alpha = .85$). See Appendix 3.1 for the full list of items. Mean scores were computed for the two subscales, with a high score indicated higher agreement with each construct. To validate this measure, which we called BNh, we collected several measures of similar constructs as described next.

Validation Measures

For validation of the BNh measure, we assessed the relation with BNSS and various other interpersonal fulfillment or nonfulfillment measures.

Basic Needs Satisfaction

Participants responded to two subscales of the BNSS (see Chapter 2); Effectance (11 items, e.g., “People care about me”; $\alpha = .87$) and Discouragement (8 items, e.g., “My life is meaningless”; $\alpha = .88$) using a Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). The BNSS measures contemporaneous basic needs satisfaction. A mean of the positively valenced items made up the Effectance score, while a mean of the negatively valenced items made up the Discouragement scale, with high scores indicated higher agreement with the construct.

Belongingness Thwarting

The Interpersonal Needs Questionnaire (Van Orden, Cukrowicz, Witte, & Joiner, 2012) was used to evaluate thwarted belongingness (10 items, e.g., “I feel unwelcome in most social situations”; 1 = *Absolutely untrue*, 7 = *Absolutely True*; $\alpha = .94$). A mean score was computed, with high scores indicating more thwarted belongingness.

Understanding

The Purpose in Life Test (Crumbaugh, 1968) measured individuals’ experience of meaning and purpose in life (20 items, e.g., “In life

I have...”), using a 5-point Likert-type scale. The response scale varied for each question (e.g., “In life I have...” 1 = *No goals or aims*, 5 = *Clear goals and aims*; $\alpha = .94$). A mean score was computed, with high scores indicate a greater purpose in life.

Control

The Mastery Scale (Pearlin & Schooler, 1978) assessed control (six items, e.g., “I have little control over the things that happen to me”), using a 4-point Likert-type scale (1 = *Strongly Agree*, 4 = *Strongly Disagree*; $\alpha = .89$). A mean score was computed, with high scores indicate feelings of control and mastery over life’s circumstances.

Thwarting Self-Enhancement

The revised-negative version of the Rosenberg Self Esteem Scale (Greenberger, Chen, Dmitrieva, & Farruggia, 2003) evaluated lack of self enhancement (10 items, e.g., “At times I think I am no good at all”; 1 = *Strongly Disagree*, 6 = *Strongly Agree*; $\alpha = .95$). A mean score was computed, with high scores indicating low feelings of self-esteem.

Distrust

To measure distrust, the IPIP Distrust subscale (Goldberg et al., 2006, p. 10 items, e.g., “I distrust people”; 1 = *Very inaccurate*, 5 = *Very accurate*; $\alpha = .92$) was used. A mean score was computed, with high scores indicating high feelings of interpersonal distrust.

Social Desirability

Social desirability was evaluated using the shortened Marlowe–Crowne Social Desirability Scale (Crowne & Marlowe, 1964; eight items, e.g., “Are you quick to admit making a mistake?”), using a 3-point Likert-type scale (1 = *No*, 2 = *Don’t know*, 3 = *Yes*).

Childhood Experiences

To measure childhood experience, we included measures of adverse childhood experiences, attachment style, early developmental niche history.

Adverse Childhood Experiences

Adverse childhood experiences were measured using the short form of the Adverse Childhood Experiences Scale (ACEs; Felitti & Anda, 2005;

$\alpha = .79$). This scale measures 10 different types of childhood trauma, five personal (i.e., physical abuse, verbal abuse, sexual abuse, physical neglect, and emotional neglect) and five related to other family members (i.e., alcoholic parent, mother victim of domestic violence, family member in jail, family member diagnosed with mental illness, and disappearance of parent). Respondents responded *yes* or *no* whether they experienced each trauma prior to their 18th birthday. The total number of trauma types reported was summed, such that the ACEs score ranged from 0 (no experience with childhood trauma) to 10 (experience with all of the traumas).

Attachment

We assessed adult *secure attachment* using the single-item rating of secure attachment from the Relationships Questionnaire (Bartholomew & Horowitz, 1991). Participants read a description of a secure attachment style and indicated to what extent the rating was like them on a 7-point Likert-type scale (1 = *Not at all like me*, 7 = *Very much like me*).

Evolved Developmental Niche History (EDNh)

The same EDNh measurement was used from Study 1 to assess childhood experience (Narvaez et al., 2016). Reliability information for each subscale was as follows: *responsive social environment*, $\alpha = .94$; *self-directed play* (2 items), $r = .64$; *social embeddedness* (2 items), $r = .47$; *negative home climate*, $\alpha = .92$; *positive home climate*, $\alpha = .83$. Touch variables were two single items: *affectionate touch* and *corporal punishment*.

Health Measures

To assess the relation between BNh and health, we collected measures of physical and mental health.

Physical Health

Physical health status and *physical health behavior* were measured using the same items and scoring shown above in Study 1. In each case, each item was standardized, and a mean score was computed using z scores to form an overall score.

Mental Health

Mental health was measured with the Inventory of Depression and Anxiety Symptoms (IDAS; Watson, Clark, & Tellegen, 1988; Watson

et al., 2008). Participants rated the extent to which they experienced various feelings, sensations, or problems (e.g., “I felt depressed”) in the past two weeks (1 = *Not at all*, 5 = *Extremely*) for 11 subscales: *General Depression*, *Anxiety*, *Dysphoria*, *Ill Temperament*, *Lassitude*, *Insomnia*, *Appetite Loss*, *Appetite Gain*, *Panic*, *Traumatic Intrusions*, and *Wellbeing*. Suicidality was excluded due to IRB restrictions.

RESULTS AND DISCUSSION

Means and standard deviations are displayed in Table 3.3. Correlations are listed in Tables 3.4, 3.5, and 3.6.

Table 3.3 Study 2 means, standard deviations, minimum, and maximum

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance history	3.57 (0.80)	1.00	5.00
Discouragement history	2.48 (1.00)	1.00	5.00
Effectance (now)	3.94 (0.61)	1.13	5.00
Discouragement (now)	2.29 (0.83)	1.00	5.00
Adverse childhood experiences	0.18 (0.22)	0.00	1.00
Secure attachment	3.48 (0.87)	1.00	5.00
Affectionate touch	3.43 (1.13)	1.00	5.00
Corporal punishment	2.50 (1.11)	1.00	5.00
Responsive social environment	3.72 (0.91)	1.00	5.00
Self-directed play	3.84 (0.80)	1.00	5.00
Social embeddedness	3.08 (0.71)	1.00	5.33
Negative home climate	2.81 (0.92)	1.00	6.00
Positive home climate	4.06 (1.04)	1.00	6.00
EDNh composite	3.49 (0.66)	1.39	4.76
Belongingness thwarting	3.40 (0.71)	1.15	4.65
Understanding	2.70 (0.50)	1.00	4.00
Control	2.40 (1.28)	1.00	6.00
Enhancing self thwarting	2.77 (0.82)	1.00	5.00
Distrust	3.57 (0.80)	1.00	5.00
Physical health status ^a	0.00 (0.76)	−2.12	1.35
Physical health behavior ^a	0.00 (0.66)	−0.72	2.26
Wellbeing	2.08 (0.51)	1.39	3.75
Depression	2.86 (0.98)	1.00	5.00
Social desirability	2.16 (0.57)	1.00	3.00

Note N=312

^aPhysical health status and behavior were calculated by standardizing seven and five items, respectively

Table 3.4 Study 2 correlations among Basic Needs history (BNh) subscales (effectance history, discouragement history) and existing measures of basic needs thwarting

Variable	1	2	3	4	5	6	7	8	9
1. Effectance history	—								
2. Discouragement history	-.83**	—							
3. Effectance (now)	.54**	-.44**	—						
4. Discouragement (now)	-.44**	.54**	-.74**	—					
5. Belongingness thwarting	-.43**	.46**	-.73**	.72**	—				
6. Understanding	.44**	-.48**	.72**	-.79**	-.71**	—			
7. Control	.29**	-.33**	.42**	-.58**	-.50**	.56**	—		
8. Enhancing self thwarting	-.39**	.52**	-.68**	.78**	.69**	-.75**	-.52**	—	
9. Distrust	-.24**	.30**	-.35**	.43**	.42**	-.37**	-.24**	.35**	—

Note N=312. ** $p < 0.01$

Table 3.5 Study 2 correlations among Basic Needs history (BNh) Subscales and existing child experience measures, physical and mental health, and social desirability

<i>Variable</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>	<i>15</i>	<i>16</i>
1. Efficance history	—															
2. Discouragement history	-.83**	—														
3. Adverse childhood experiences	-.50**	.56**	—													
4. Secure attachment	.32**	-.32**	-.22**	—												
5. Affectionate touch	.48**	-.43**	-.38**	.37**	—											
6. Corporal punishment	-.28**	.27**	.44**	-.16**	-.20**	—										
7. Responsive social environment	.69**	-.67**	-.71**	.38**	.63**	-.40**	—									
8. Self-directed play	.49**	-.44**	-.27**	.18**	.43**	-.13*	.47**	—								
9. Social embeddedness	.38**	-.42**	-.40**	.22**	.30**	-.23**	.43**	.35**	—							
10. Negative home climate	-.57**	.70**	.65**	-.28**	-.34**	.38**	-.65**	-.29**	-.33**	—						
11. Positive home climate	.78**	-.72**	-.50**	.35**	.55**	-.24**	.74**	.51**	.41**	-.50**	—					

(continued)

Table 3.5 (continued)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
12. EDNh composite	.74**	-.73**	-.69**	.40**	.73**	-.56**	.89**	.62**	.60**	-.70**	.80**	-	-	-	-	-
13. Physical health status	.27**	-.33**	-.29**	.32**	.17**	-.13*	.31**	.16**	.17**	-.38**	.25**	.31**	-	-	-	-
14. Physical health behavior	-.20**	.21**	.29**	-.22**	-.05	.15**	-.22**	-.11	-.15**	.26**	-.14*	-.22**	-.64**	-	-	-
15. Depression	-.31**	.46**	.31**	-.35**	-.14*	.07	-.28**	-.14*	-.31**	.40**	-.27**	-.31**	-.53**	.43**	-	-
16. Wellbeing	.42**	-.46**	-.18**	.48**	.29**	-.06	.34**	.24**	.21**	-.29**	.44**	.38**	.44**	-.24**	-.41**	-
17. Social desirability	.07	-.17**	-.02	.18**	.05	.06	.03	-.03	.09	-.12*	.11*	.06	.15**	.02	-.19**	.25**

Note N = 312. * $p < 0.05$, ** $p < 0.01$

Table 3.6 Study 2 hierarchical regression predicting physical health status

<i>Model</i>	<i>Physical health status</i>				<i>R² (adjusted)</i>	<i>R² change</i>	<i>F</i>
	<i>b</i>	<i>SE</i>	β				
<i>Model 1</i>					.11 (.11)		19.28**
Effectance history	-.01	.09	-.01				
Discouragement history	-.26	.07	-.34**				
<i>Model 2</i>					.12 (.11)	.01	4.16*
Effectance history	-.07	.10	-.08				
Discouragement history	-.21	.08	-.27**				
EDNh composite	.19	.10	.17*				
<i>Model 3</i>					.13 (.12)	.01	2.00
Effectance history	-.06	.10	-.06				
Discouragement history	-.19	.08	-.25*				
EDNh composite	.12	.11	.10				
Adverse childhood experiences	-.04	.03	-.11				
<i>Model 4</i>					.17 (.15)	.04	3.73**
Effectance history	-.08	.10	-.08				
Discouragement history	-.23	.08	-.30*				
EDNh composite	.09	.11	.08				
Adverse childhood experiences	-.02	.03	-.07				
Sex	-.03	.08	-.02				
Age	-.01	<.01	-.15**				
Income	.08	.03	.15*				
Social status	<.01	<.01	-.04				
<i>Model 5</i>					.19 (.16)	.05	6.33*
Effectance history	-.05	.10	-.05				
Discouragement history	-.18	.08	-.24*				
EDNh composite	.10	.11	.09				
Adverse childhood experiences	-.02	.03	-.07				
Sex	-.08	.08	-.05				
Age	-.01	<.01	-.15**				
Income	.08	.03	.16**				
Social status	<.01	<.01	-.03				
Social desirability	.19	.08	.14*				

Note $N=312$. * $p<0.05$, ** $p<0.01$

We did not analyze two variables. We asked participants whether they were breastfed and 93 (29.8%) said they did not know. Breastfeeding experience was not significantly related to the two subscales of basic

needs (Effectance: $r = .02$; Discouragement, $r = -.003$) nor to the health variables (good physical health: $r = .09$, poor physical health: $r = -.03$). As a result, we did not include this variable in the analyses. Also, of the males, 120 indicated they were circumcised and 46 said they were not. Circumcision was not significantly correlated with basic needs satisfaction (Effectance: $r = -.13$; Discouragement, $r = .09$) nor with the health variables (good physical health: $r = -.15$, $p < .06$, poor physical health: $r = .07$). As a result, we did not include this variable in the analyses.

First, for validation purposes, we examined Pearson correlations among the BNh, BNSS, and measures of BUCET list variables. See Table 3.4. The two BNh subscales were strongly negatively related to one another and, similarly, the two subscales for concurrent BNSS were strongly negatively related to one another. However, correlations between history and concurrent basic needs were more moderate, suggesting that participants were in fact responding differently to retrospective and concurrent reports of basic needs. Further, BNh subscales were significantly correlated with the BUCET measures, with positive associations between Effectance History and negative with Discouragement History for the positively valenced scales of Understanding and Control, and negative associations with Effectance History and positive with Discouragement History for the negatively valenced scales of Belongingness Thwarting, Self-Enhancement Thwarting and Distrust. These relationships contribute to evidence of construct validity for the new BNh measure.

To further establish the relationship between basic needs and childhood experiences, Pearson correlations among childhood experience—ACES, attachment, EDNh and BNh subscales—were examined (Table 3.5). All of the childhood variables were significantly correlated with the BNh subscales. Unsupportive childhood experiences (i.e., ACEs, emotional punishment, and negative climate) were correlated positively with Discouragement History and negatively with Effectance History whereas supportive childhood experiences (i.e., secure attachment, social embeddedness, self-directed play, responsiveness, affectionate touch, and positive climate) were correlated positively with Effectance History and negatively with Discouragement History.

Next, we examined Pearson correlations among BNh and adulthood health variables (Table 3.5). All of the childhood experiences were significantly correlated with measures of health in adulthood. Supportive childhood experiences were correlated positively with physical health

status and wellbeing and negatively with physical health behavior and depression while unsupportive childhood experiences were correlated positively with physical health behavior and depression and negatively with physical health status and wellbeing. In addition, ACEs was positively related to poor physical and mental health and negatively related to good physical and mental health. There was no relation between ACEs and social desirability. Again, here, we can infer that supportive childhood experiences, assessed both via EDNh and ACEs may be representative of less stressful experiences in childhood. We also examined correlations among health variables and social desirability, finding a positive relation between social desirability and physical health status, no relation with physical health behavior, a negative relation with depression, and a positive relation with wellbeing. These relations suggest that it may be more socially desirable to report having good physical and mental health, and less desirable to report poor mental health. Or, when people feel good, they express a rosier outlook (“Pollyanna effect”; Boucher & Osgood, 1969).

Last, we performed hierarchical regressions to mimic what we found in Chapter 2 with the BNSS scales predicting physical and mental health variables. The goal of these models was to investigate which BNh subscale accounted for greater variance in predicting physical and mental health, and whether this effect was beyond that due to control variables and beyond that of the other childhood-history variables, ACEs and EDNh. To examine which subscale accounted for greater variance in predicting an outcome, we included Effectance History and Discouragement History in the first model. In the second model, we added ACEs and the EDNh Composite to assess whether negative experiences or EDNh-consistent experience accounted for additional variance. In the third model, we added demographic control variables (i.e., sex, age, income, and social status) to assess whether the subscales still accounted for significant variance, and last we added social desirability. Hierarchical regressions were separately conducted for physical health status, physical health behavior, wellbeing, and depression (see Tables 3.6, 3.7, 3.8, and 3.9).

In the regression predicting *physical health status*, although Effectance History had been significantly correlated with each of the physical and mental health outcomes, Discouragement History consumed the variance for good physical health, accounting for 11% of the variance, whereas Effectance History was not a significant predictor (see Table 3.6). Adding

Table 3.7 Study 2 hierarchical regression predicting physical health behavior

<i>Model</i>	<i>Physical health behavior</i>					
	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.05 (.04)		7.42**
Effectance history	−.08	.08	−.10			
Discouragement history	.08	.07	.13			
<i>Model 2</i>				.05 (.04)	.01	2.23
Effectance history	−.04	.09	−.05			
Discouragement history	.05	.07	.08			
EDNh composite	−.13	.09	−.13			
<i>Model 3</i>				.09 (.08)	.03	11.43**
Effectance history	−.07	.09	−.08			
Discouragement history	.01	.07	.02			
EDNh composite	.03	.10	.03			
Adverse childhood experiences	.08	.02	.26**			
<i>Model 3</i>				.11 (.09)	.03	2.09
Effectance history	−.06	.09	−.07			
Discouragement history	.03	.07	.05			
EDNh composite	.05	.10	.05			
Adverse childhood experiences	.07	.02	.22**			
Sex	.10	.07	.07			
Age	.01	<.01	.10			
Income	−.05	.03	−.10			
Social status	<.01	<.01	.03			
<i>Model 4</i>				.11 (.09)	.00	0.01
Effectance history	−.06	.09	−.07			
Discouragement history	.04	.07	.05			
EDNh composite	.05	.10	.05			
Adverse childhood experiences	.07	.02	.22**			
Sex	.10	.08	.07			
Age	.01	<.01	.10			
Income	−.05	.03	−.10			
Social status	<.01	<.01	.03			
Social desirability	.01	.07	.01			

Note $N=312$. ** $p<0.01$

EDNh Composite also made a significant contribution to the explained variance (11%), whereas adding ACEs in Model 3 did not. When adding the demographic control variables in model 4, age and income both significantly contributed to variance explained (15%) with age being negatively related to physical health status and income being positively related. Last, adding social desirability also significantly added to the variance

Table 3.8 Study 2 hierarchical regression predicting wellbeing

<i>Model</i>	<i>Wellbeing</i>				<i>R² (adjusted)</i>	<i>R² change</i>	<i>F</i>
	<i>b</i>	<i>SE</i>	β				
<i>Model 1</i>					.22 (.21)		42.91**
Effectance history	.16	.11	.13				
Discouragement history	-.34	.09	-.35**				
<i>Model 2</i>					.22 (.21)	.001	.46
Effectance history	.14	.12	.11				
Discouragement history	-.32	.09	-.33**				
EDNh composite	.08	.12	.06				
<i>Model 3</i>					.24 (.23)	.02	6.91**
Effectance history	.10	.12	.08				
Discouragement history	-.36	.09	-.37**				
EDNh composite	.25	.13	.17				
Adverse childhood experiences	.08	.03	.18**				
<i>Model 4</i>					.26 (.24)	.02	2.17
Effectance history	.09	.12	.07				
Discouragement history	-.38	.10	-.38**				
EDNh composite	.23	.13	.16				
Adverse childhood experiences	.08	.03	.18*				
Sex	.21	.10	.11*				
Age	<.01	<.01	-.04				
Income	.07	.04	.10				
Social status	<.01	<.01	-.03				
<i>Model 5</i>					.29 (.27)	.03	12.15**
Effectance history	.14	.12	.11				
Discouragement history	-.30	.10	-.31**				
EDNh composite	.25	.13	.17				
Adverse childhood experiences	.08	.03	.17*				
Sex	.12	.10	.06				
Age	<.01	<.01	-.06				
Income	.07	.04	.11*				
Social status	<.01	<.01	-.02				
Social desirability	.31	.09	.18**				

Note $N=312$. * $p<0.05$, ** $p<0.01$

explained (16%), and social desirability was positively related to reporting physical health status. When all variables were included, Discouragement History was still the strongest predictor of physical health status, which

Table 3.9 Study 2 hierarchical regression predicting depression

<i>Model</i>	<i>Depression</i>					<i>F</i>
	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	
<i>Model 1</i>				.22 (.22)		44.54**
Effectance history	.14	.06	.22*			
Discouragement history	.32	.05	.64**			
<i>Model 2</i>				.22 (.22)	.00	.03
Effectance history	.14	.06	.22*			
Discouragement history	.32	.05	.63**			
EDNh composite	-.01	.06	-.01			
<i>Model 3</i>				.23 (.22)	.01	3.05
Effectance history	.13	.06	.20*			
Discouragement history	.31	.05	.60**			
EDNh composite	.05	.07	.06			
Adverse childhood experiences	.03	.02	.12			
<i>Model 3</i>				.25 (.23)	.02	1.69
Effectance history	.12	.06	.19*			
Discouragement history	.29	.05	.57**			
Adverse childhood experiences	.05	.07	.06			
EDNh composite	.03	.02	.12			
Sex	.02	.05	.02			
Age	<.01	<.01	-.07			
Income	-.04	.02	-.13*			
Social status	<.01	<.01	.04			
<i>Model 4</i>				.26 (.24)	.01	5.45*
Effectance history	.11	.06	.17			
Discouragement history	.26	.05	.52**			
Adverse childhood experiences	.04	.07	.06			
EDNh composite	.02	.02	.12			
Sex	.05	.05	.05			
Age	<.01	<.01	-.06			
Income	-.05	.02	-.13*			
Social status	<.01	<.01	.03			
Social desirability	-.11	.05	-.12*			

Note *N* = 312. **p* < 0.05, ***p* < 0.01

can be seen by the standardized beta. This suggests that when an individual felt like their childhood needs were not fulfilled, they were likely to report lower physical health status, and this effect was above and beyond that found by examining other childhood experience variables and demographic factors that often contribute to health outcomes.

In the regression predicting *physical health behavior*, neither Effectance History nor Discouragement History was significant predictors in model 1, although they did contribute to 4% of explained variance (see Table 3.7). Adding EDNh Composite did not significantly contribute to variance explained, but adding ACEs did (8%). ACEs was significantly positively related to physical health behavior. When adding the demographic control variables in model 4, none of the variables contributed to the explained variance, nor did social desirability in the last model. Overall, the variables explained 9% of the variance in physical health behavior, but only ACEs was a significant contributor. This suggests that when an individual reported more adverse experiences as a child, they were more likely to report behaviors associated with poor physical health, and this effect was above and beyond that found by examining other childhood experience variables and demographic factors that often contribute to health outcomes.

In the regression predicting *wellbeing*, although Effectance History had been significantly correlated with each of the physical and mental health outcomes, Discouragement History consumed the variance for wellbeing, accounting for 21% of the variance, whereas Effectance History was not a significant predictor (see Table 3.8). Adding EDNh Composite did not make a significant contribution to the explained variance (21%), whereas adding ACEs did significantly contribute (23%). Despite being negatively related to wellbeing in the correlations, ACEs was positively related to wellbeing in this model. This suggests a suppression effect rather than multicollinearity (ACEs VIF=1.94), so this relationship is uninterpretable. Next, when adding the demographic control variables in model 4, sex significantly contributed to variance explained (24%) with women showing more favorable outcomes regarding wellbeing. Last, adding social desirability also significantly added to the variance explained (27%), and social desirability was positively related to reporting wellbeing. When all variables were included, Discouragement History was still the strongest predictor of wellbeing, which can be seen by examining the standardized beta. This suggests that when an individual felt like their childhood needs were not fulfilled, they were less likely to report high wellbeing, and this effect was above and beyond that found by examining other childhood experience variables and demographic factors that often contribute to mental health outcomes.

In the regression predicting *depression*, both Effectance History and Discouragement History were predictive in explaining variance for depression (22%; see Table 3.9). The positive relation between depression and Effectance History was inversed from the relationship in the correlations, which may again suggest issues with multicollinearity (Effectance VIF=3.95). When adding EDNh Composite, no additional variance was explained, nor with ACEs. When adding the demographic control variables in model 4, income significantly contributed to variance explained (23%), such that higher income related to lower depression. Last, adding social desirability also significantly added to the variance explained (24%), and social desirability was negatively related to depression. When all variables were included, Discouragement History was still the strongest predictor of depression, which can be seen by the standardized beta. This suggests that when an individual felt like their childhood needs were not fulfilled, they were likely to also report higher depression, and this effect was above and beyond that found by examining other childhood experience variables and demographic factors that often contribute to health outcomes.

GENERAL DISCUSSION

The purpose of these studies was to better understand the relationship between childhood experience and health in adulthood and whether basic needs satisfaction early in life plays a role. We first used an existing measure of childhood experience, EDNh, to assess the relation between childhood needs fulfillment and physical health and found that responsive social environment and positive climate, indicative of a supportive childhood environment, were related to reports of physical health status and low frequency of physical health behaviors. Further, we found that experiences of corporal punishment and negative climate, both of which are indicative of a stressful childhood experience, were related to physical health behaviors and lower physical health status. Additionally, use of an overall childhood environment variable revealed that higher fulfillment of childhood experiences consistent with the EDN was related positively to physical health status and negatively to physical health behavior, suggesting that the overall supportive environment during childhood is an important component for physical health in later life. Although prior studies had found a relation between EDNh scores and mental health

(e.g., Narvaez et al., 2016), this was the first time their relation to physical health was examined and confirmed.

In a second study, we modified the BNSS to capture retrospective view of childhood psychosocial needs fulfillment, BNh. We validated the measure and showed that it was moderately correlated with the BNSS scale, indicating the participants were differentiating between past needs satisfaction and current needs satisfaction. Again, we examined the relation to the new scale with physical and mental health. We found that childhood experience, measured both via BNh and EDNh, were related to reports of physical and mental health. The new BNh scale was related to the specific experiences in childhood, as measured by the EDNh, suggesting that perhaps these practices contribute to basic needs satisfaction. Further research should be conducted to examine the relationship between specific EDN practices, like affectionate touch, and basic needs satisfaction, ideally through a longitudinal study.

Last, we tested whether a BNh measure would perform as well or better than a more specified list of components as described by the EDN. We used various hierarchical regression models to test the predictive power of BNh and EDNH along with various control variables and found that Discouragement History, or a lack of basic psychosocial needs fulfillment in childhood, was the strongest predictor of physical health status, wellbeing, and depression, which suggests that when an individual felt like their childhood needs were not fulfilled, they were likely to report lower physical health status, less wellbeing, and more depression. We also found that in respect to physical health behavior, ACEs was the strongest predictor—beyond basic needs, EDN, and the demographic variables we included. These results indicate that stressful childhood experiences are especially important in predicting health outcomes, including both physical and mental health, concurring with prior research showing that higher ACES scores correspond to poorer health outcomes in adulthood (Felitti & Anda, 2005).

As we noted earlier, stress in early life can cause toxicity in developing systems (e.g., Shonkoff et al., 2012). But human maturation lasts a good while because of the time it takes a human to reach adulthood (around age 20 for general physical development, nearly age 30 for the brain's executive functions). Along the way, there are several sensitive periods in development (early childhood, early adolescence, early adulthood) for shaping wellbeing or illbeing. Childhood experiences along the

maturational pathway may shift health trajectories depending on the timing, intensity, and duration of the experience, leaving a mark into adulthood. Further studies must be done to tease out the buffering of the EDN, and its characteristics throughout development, and the toxicity of adverse childhood experiences.

As found in other studies, age was negatively related to self-assessed good health. The age range of our samples went up to age 81 (70 in the second sample), so it included the time period when physical ailments proliferate. Income explained significant variance in the final models for the mental health variables, wellbeing, and depression. Longitudinal studies have demonstrated a graded association between socioeconomic status and health (e.g., Marmot, Shipley, & Rose, 1984), as discussed in Chapter 1. The importance of sufficient wealth for health concurs with a review of research on the importance of economic equality on mental and physical health as well as societal wellbeing (Wilkinson & Pickett, 2011).

LIMITATIONS AND FUTURE DIRECTIONS

These were cross-sectional studies with convenience samples of adults from the United States. Longitudinal, cross-cultural research is needed with larger diverse samples. Further validation is needed to examine the usefulness of the BNh measure.

CONCLUSION

Examining childhood experience, even retrospectively, may add considerable predictability to the wellbeing of individuals. In the next chapter, we examine the effects of basic needs on moral outcomes, examining for example whether basic needs satisfaction mediates the relation between childhood experience and moral orientations and behavior.

APPENDIX 3.1: BASIC NEEDS HISTORY (BNH)

BNSSH When answering the following questions please think of your experience growing up (all the years before age 18). Please indicate the extent to which you agree or disagree with each of the following statements with respect to your childhood.

<i>I felt like...</i>	<i>Strongly disagree</i> (1)	<i>Disagree</i> (2)	<i>Neither agree nor disagree</i> (3)	<i>Agree</i> (4)	<i>Strongly agree</i> (5)
...people cared about me. (1)	☐	☐	☐	☐	☐
...I fit into at least one social group. (2)	☐	☐	☐	☐	☐
... I had influence on those who were important in my life. (3)	☐	☐	☐	☐	☐
...I could shape my world. (4)	☐	☐	☐	☐	☐
...Other people valued my skills. (5)	☐	☐	☐	☐	☐
...I could make choices that mattered in key areas in my life. (6)	☐	☐	☐	☐	☐
...I could safely make my way in the world. (7)	☐	☐	☐	☐	☐
... I could find the support that I need from others when necessary. (8)	☐	☐	☐	☐	☐
...I had goals for my life. (9)	☐	☐	☐	☐	☐
...I had opportunities in my life to improve my skills and talents. (10)	☐	☐	☐	☐	☐
... that things would improve even though I may have felt unhappy at times. (11)	☐	☐	☐	☐	☐
...I didn't belong anywhere. (12)	☐	☐	☐	☐	☐
...there was nothing I could do to change my life. (13)	☐	☐	☐	☐	☐
...I felt incapable in key areas in my life. (14)	☐	☐	☐	☐	☐
...I was boxed in with no freedom. (15)	☐	☐	☐	☐	☐
...the world was a mean place so I had to be careful. (16)	☐	☐	☐	☐	☐
...my life was meaningless. (17)	☐	☐	☐	☐	☐
...I was beaten down. (18)	☐	☐	☐	☐	☐
...I was unhappy with my life. (19)	☐	☐	☐	☐	☐

Scoring
BNSShEffectance: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11
BNSShDiscouragement: 12, 13, 14, 15, 16, 17, 18, 19

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Basic Needs Satisfaction and Its Relation to Sociomoral Capacities and Behavior

Angela Kurth and Darcia Narvaez

Abstract Interdisciplinary research is demonstrating the importance of physiological and neurobiological development for adult functioning. Recently, the theoretical linkages between early experience and adult morality have been drawn. We examine the relation of early experience to basic needs fulfillment and their relation to adult moral functioning. Using the Basic Needs Satisfaction Scale (BNSS), a short, comprehensive scale with two subscales: Life Effectance and Life Discouragement. In two studies, we demonstrate evidence of basic needs satisfaction mediating the relationship between childhood experience and morality. We also examine which retrospective factors in childhood are most predictive of moral outcomes in adulthood. These results suggest that comprehensive

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satisfaction of basic needs may help explain the mechanism behind key relationships between childhood experiences and outcomes in adulthood that have been previously established by others.

Keywords Morality · Triune ethics · Basic needs · Empathy · Evolved developmental niche

What is morality? How is it related to basic needs? We examine these questions throughout this chapter. Here is the basic argument in a nutshell. Humans evolved a moral sense. The moral sense is reliant on social and self-regulatory capacities. These capacities are shaped in early life. Morality too then appears to be highly shaped by experience in the early years of life when basic biosociality is formed. Optimal moral functioning is relationally attuned, compassionate and communal at the intuitive level, but this develops from experience after birth. Such morality relies on well-functioning neurobiological structures such as the stress response. When neurobiological structures are under- or mis-developed, an individual's morality becomes reliant on survival systems which are innate. These are primitive parts of the brain that when dominant foster a self-protectionist orientation (not compassionate or communal). Thus, early life experience must be one where evolved basic needs are met or else the more primitive systems will be more dominant in personality and more easily triggered. Below, we take each part of the argument piece by piece. After that we present two empirical studies.

HUMANITY'S MORAL SENSE

In an effort to show that communal morality is part of human evolution, Charles Darwin (1871) identified several characteristics that accumulated through the tree of life: social pleasure, concern for the opinion of others, memory for one's goals and outcomes, habit development, and self-control. Darwin noted that these characteristics were common among "primitive people" but not so much his fellow British compatriots. Why the difference? Although Darwin assumed these were inherited characteristics, data suggests that *postnatal* experience is key to their development.¹ Narvaez has pointed to the importance of the evolved nest (evolved developmental niche) for normal development of human

nature, including the moral sense (Narvaez, 2015, 2016, 2018). Darwin noted that his compatriot women displayed the characteristics but not so much his fellow males. Why a gender differences? Males are more significantly harmed by toxic early stress (Schore, 2017). Narvaez suggests that each of the moral sense features has neurobiological underpinnings shaped by experience. Darwin toyed with the idea that the moral sense was more powerful than natural selection (Darwin, 1871; Loye, 2000).

EARLY SHAPING OF SELF-REGULATORY CAPACITIES UNDERGIRD SOCIAL CAPACITIES

We discussed the effects of stress on health in Chapters 2 and 3. Stress undermines the development of all neurobiological systems. To illustrate the effects of early stress on self-regulation, we can take the vagus nerve as an example.

The autonomic system regulates physiological and behavioral adaptation in every situation and is comprised of the parasympathetic, sympathetic and social engagement systems (Porges, 2017). The vagus nerve facilitates the parasympathetic and the social engagement systems. The vagus nerve is the 10th cranial nerve, connecting all major systems of the body (e.g., cardiac, respiratory, digestive). The parasympathetic system governs survival functions such as breathing and heart rate, in contrast to the sympathetic system which is governed by other nervous system components and operates muscles and mobilization. The social engagement system involves multiple cranial nerves, including the vagus nerve, and facilitates involuntary actions of the voice, face, and heart. Under normal conditions, the parasympathetic system is focused on resting and rebuilding throughout the different activities of the day, the sympathetic system mobilizes for everyday activities and the social engagement system facilitates social interaction. Under conditions of threat, the first response in normally developed persons is social—to turn to others for comfort or protectionist. If that does not alleviate the feeling of threat, the sympathetic system is triggered into fight or flight reactions, and if that is unsuccessful the parasympathetic system is triggered into dissociation, shock, and immobility.

The vagus nerve begins myelination after birth from mother's voice, touch, and eye contact. When caregivers are warm and responsive to needs, a baby's vagus nerve is likely to be properly myelinated so that the social engagement system is predominant, allowing for intimate

and flexible relationships. But when early life is toxic, with missing critical support such as the evolved nest, the vagus nerve may not develop properly (“vagal tone”), influencing health and social capacities (Porges, 2011). Several key components of social intelligence are reliant on proper vagus nerve function (i.e., vagal tone), such as empathy and spontaneous feeling in social interactions, interpersonal response, and awareness. Instead, the stress response will be more easily triggered, heightening a sense of anxiety, anger, and fear. The stress response shifts blood flow from the brain to muscles, shifting perception. In a healthily developed individual, the stress response operates appropriately across situations, as described below. But in a toxically stressed individual, undercared for, traumatized, or abused in early life, the stress response is hyperreactive and hard to calm.

THE MORAL SENSE RELIES ON SOCIAL AND SELF-REGULATORY CAPACITIES

Perhaps you are picking up on what all the physiology has to do with moral functioning. An individual’s body learns from early caregiving how to self-regulate (e.g., manage stress) because self-regulatory capacities use the same hormones that relate to sociality, including capacities to detect and cope with stressful social experiences. A person in a state of alarm (stress response) cannot use their full capacities. A person whose physiological systems are misdeveloped will run out of self-control fuel quickly and will not be able to sustain the ‘good mood’ required for cooperative behavior (Niehoff, 1999). A stress-reactive individual may also have difficulty with cooperative and compassionate behavior because of what happens under stress. Ask yourself: when are you most compassionate?—when you are under pressure to complete a project, when you are anxious about social criticism, or when you are relaxing with friends on the porch? Right, probably in a relaxed situation because stress affects our sociomoral response. The stress response is linked to various components of moral functioning like self-regulation, empathy, personal distress, perspective taking, judgment, sensitivity, and perception, which will be discussed below. All of these sociomoral factors are influenced by the state of the physiological systems. Even with a low level of feeling that the world is unreliable and that people are untrustworthy, morality may be hampered. Triune ethics meta-theory describes how early stress can shift one’s disposition toward self-protectionist ethics and alter the mindsets that guide moral behavior generally.

TRIUNE ETHICS META-THEORY

Triune ethics meta-theory is a psychobiological theory of moral development and moral functioning (Narvaez, 2008, 2014, 2016). It offers a neurobiologically based explanation for different ethical or moral mindsets.² As noted above, our social capacities are influenced by our neurobiology. Three distinctive moral systems, rooted in the evolved strata of the brain, propel human moral action on an individual and group level. See Tables 4.1 and 4.2 for some general features of basic ethical mindsets.

The *protectionist* ethic is rooted in survival systems which are shared with all animals and are present at birth. When an instinctive survival orientation is used in making decisions and taking action, trumping other options, it becomes a protectionist ethic. The protectionist ethic gets triggered by threat—physical or psychological. We all have this ethic within us—when we are motivated to withdraw from a relationship or

Table 4.1 Characteristics of protectionist ethics: safety, vicious, detached

	<i>Protectionism (face to face hierarchical orientation: Oppositional or withdrawn)</i>	<i>Protectionist Imagination (abstraction capabilities added to face-to-face orientation)</i>
Physiological context	Stress response from perceived threat (often subtle), poor vagal tone, draws energy away from higher order brain areas	Routinized <i>Vicious:</i> Fueled by self-protective emotions <i>Detached:</i> Dissociation from emotion
Moral dispositions	Basic distrust Defensive aggression or defensive appeasement	Controlling of self/others <i>Vicious:</i> Deception, ruthlessness for “moral” goal <i>Detached:</i> Relationally detached
Moral concerns	Ingroup loyalty, purity, tradition, rituals, following precedent	<i>Vicious:</i> Scapegoating, eliminationism <i>Detached:</i> Rules, mechanistic systems
Moral self in action	Exclusionary	<i>Vicious:</i> Cruel <i>Detached:</i> Aloof
Kohlberg moral judgment stage preference	Stage 1 (avoidant of punishment) Stage 2 (tit for tat)	<i>Vicious:</i> Stage 4 as law and order <i>Detached:</i> Stage 5 as theory

Table 4.2 Characteristics of relationally attuned ethics: engagement and communal imagination

	<i>Engagement (face to face relational attunement)</i>	<i>Communal Imagination (abstraction capabilities added to engagement)</i>
Physiological context	Oxytocin, serotonin dominant; vagal tone	Fueled by prosocial emotions (care, play)
Moral dispositions	Love (positive connection) and fellow feeling in the moment: reciprocity, responsiveness	Fellow feeling abstracted: Justice, mercy
Moral concerns	Inclusive of immediate other, empathy/sympathy, perspective taking	Broadly inclusive of “others,” egalitarianism
Moral self in action	Open, receptive	Hospitable, tolerant
Kohlberg moral judgment stage preference	Stage 3 (personal relational)	Stage 5 as communalism Stage 6 (principled communal cooperation)

lash out in self-defense. This sense of ongoing immediate threat can become a dispositional social orientation if trauma, abuse or neglect was experienced during a sensitive period in life (sensitive periods are first five years, early adolescence, early adulthood, therapy). In this case, prior experience is imposed on the present as the stress response kicks in and dominates behavioral choices. A protectionist ethic perceives the world hierarchically—i.e., dominance versus submission or one-up/one-down. There are two basic forms of face-to-face protectionism, both based in distrust: one is fueled more visibly by anger and results in aggression (opposition) and one is fueled more visibly by fear and results in emotional and psychic disengagement (withdrawal). Dispositionally, a person can favor one or the other or flip between them. See Table 4.1 for more descriptors of this face-to-face ethic in the second column.

Parents and communities encourage the dominance of protectionism through undercare—not providing for basic needs—as well as trauma, abuse and neglect. That is, early life stress shapes disposition for protectionism. How much a person resorts to using these innate instincts for self-protection in moral decisions and actions is partially determined during the preverbal years of life. The protectionist ethic is based largely in closed systems that are difficult to influence once they are molded in

early childhood. Without intervention, the individual is left with the phylogenetically older protectionist ethic as a dominant mode for the moral life. Although there may be some plasticity after the initial groundwork is laid, flexibility to change brain architecture may require extensive therapy to recondition the mind/brain (e.g., re-parenting, mindfulness meditation, etc.).

The reader might ask, isn't a protectionist ethic an advantage in the modern world? Aren't there terrorists out to get us? Isn't it adaptive to 'be on edge'? Certainly, in some situations (e.g., walking in a dark alley) we want to be on alert. The problem is when it is routine. The stress response impairs higher order thinking (Arnsten, 2009), which in this case is not conducive to getting along with others cooperatively. When the individual's traumatic conditioned past rears its ugly head and takes over attention and guides action, it is detrimental to present cooperative functioning. Unless therapy or other intervention has increased control over the power of the past, the individual will be propelled into a protectionist mindset. "Aggression directed against the wrong person, at the wrong time, in the wrong place, for the wrong reason or with the wrong level of intensity is no longer protective or competitive but violent" (Niehoff, 1999, p. 76). The protectionist ethic undermines intelligence, sociality as well as morality (Narvaez, 2014).

The protectionist ethic is part of lower evolution (Darwin-1; Loye, 2000), driven by goodness of fit and self-interest and has its place for individual and group survival. Protectionism is not the driving force of mammalian and human evolution as identified by Darwin (Darwin-2) however; that force resides primarily in the second ethic, engagement.

The engagement ethic is about *attuned relationship*. It is about connecting and bonding in the moment, right now. The social engagement system, described earlier as part of vagal function, is part of the capacities that underlie relational attunement but it also involves endocrine systems like the oxytocin system which facilitates bonding (Carter & Porges, 2013). How much you are able to maintain an engagement ethic may be based in brain systems and intuitions formed during right brain hemisphere growth in early life, when you could not yet speak (Schore, 2003a, 2003b). When a young child's needs are met without question, delay or distress, their body/brain learns to expect the world to be benevolent (Erik Erikson's trust, 1950). The personality does not shape itself around self-protection for basic needs but a sense of safety and social enjoyment. Engagement involves limbic resonance, a "mind melding" of sorts with

others (Lewis, Amini, & Lannon, 2000; described in Chapter 2). Such a connection is critical for deep engagement and for full moral capabilities. See Table 4.2 for more descriptors of this ethic.

Humans share capacities for relational attunement with other primates but have further moral capacities that are largely ours alone, the imagination ethic. Imagination ethics are about *abstraction*, or pulling away from the present moment. They can take different forms. Which forms become habitual may reflect early experience (Schoore, 2013). Ideally imagination links with the prosocial orientation of the engagement ethic becoming a *communal imagination*, guided by fellow feeling and relational commitment. See Table 4.2 for further elements. However, if the imagination is tied up with a self-protectionism, it can become a vicious imagination, which emphasizes control over self or others (see Table 4.1, last column). If one dissociates from emotions and relational commitment, imagination can be detached and capable of great damage to others.

These ethics and which one or ones we prefer are deeply related to our physiology, which drives our psychology. Although our right hemisphere gathers experiences to form intuitions, they are transferred to the left hemisphere which categorizes and sorts them and then these categories and filters shape right hemisphere data gathering, affecting our perceptions (McGilchrist, 2009). When one is in a particular mode of being, it becomes a mindset with particular affective expectancies (Wilson, Lisle, Kraft, & Wetzel, 1989). It affects what one attends to, the perceptual cues one notices (including threat cues), and perceived affordances (social, physical action possibilities). It affects what rhetoric is attractive and what reasoning seems “reasonable” and what goals are preferred. In fact, a mindset is so basic, it affects early processing of stimuli. Goal-based sensory sampling takes place at the very early stages of visual processing (Serences, Ester, Vogel, & Awh, 2009; Zhang & Luck, 2009). Within about 100 milliseconds after a visual cue, subcortical brain structures receive highly processed sensory input from the cortex—the interpreter. This shifts the typical focus of early sensory processing as a subcortical activity. Instead, subcortical structures like the brainstem, midbrain, and thalamus not only respond to external sensory information but the preferences of the cortical system (Barrett & Bar, 2009).

We may have learned to habitually use one mindset or another based on experience during sensitive periods and patterns and routines we have experienced or adopted. The early years of experience sensitize a child to certain aspects of the environment. (Sensitization is a learned fear due to

aversive experience.) For example, in a household with a violent father, going “on alert” when the father arrives home. In this way too, certain situations may evoke a mindset that we normally otherwise do not use.

MEETING BASIC NEEDS IN EARLY LIFE

Basic needs identified by Abraham Maslow (1970) include physiological (measures that maintain homeostasis, like adequate liquid and food), safety (e.g., protection and stability), belonging and love (intimate relationships), esteem (a sense of competence and self- and other-esteem), and self-actualization. Researchers have developed numerous measures to examine these and similar constructs. In Chapter 2, we described the development of a composite measure of Fiske’s (2004) BUCET list of basic needs: belonging, understanding, control, self-enhancement, and trust. In Chapter 3, we described the validation of a similar composite measure addressing basic needs satisfaction in early life. In this chapter, we examine the relation of basic needs satisfaction to moral behavior.

Developmental psychological studies are beginning to examine nest components, demonstrating their effects on social and moral capacities. For example, breastfeeding length is positively related to the development of young children’s inhibitory control and conscience (guilt and concern after wrongdoing) longitudinally over three years (Narvaez et al., 2013). In the same study, maternal social support positively correlated with child cooperation at 18- and 30 months, child social competence at 24 months, and reduced aggressive behavior at 18 months. In a cross-sectional study in China of maternal report of their 3–5-year-old child’s experience, breastfeeding *length* was positively correlated with child’s inhibitory control and conscience; affectionate touch experience was significantly positively related to behavior regulation, empathy, and concern; these all held after controlling for maternal responsiveness, income and education (Narvaez et al., 2013).

Affectionate touch and little corporal punishment are correlated with the development of empathy and self-regulation in young children (Narvaez et al., 2018). Higher levels of evolved nest (affection, play, family togetherness) experienced in childhood as reported by adults was correlated with pathways from EDN history to secure attachment, mental health, perspective taking and the engagement ethic (relational morality) instead of self-protectionist morality (Narvaez, Wang, & Cheng, 2016).

CURRENT STUDIES

In the first study, we wanted to see if there was a relation between basic needs satisfaction, childhood experience, moral capacities, and ethical orientation.

STUDY 1

Method

Participants and General Procedure

A general population sample of 350 adults from the United States was recruited and paid through Amazon Mechanical Turk. Individuals were electronically provided with an explanation of the study, a consent form, and the study measures. All study measures were compiled into a survey that was administered in a single online session using Qualtrics. Those who decided to participate were paid about \$3.00 per hour for their completion of the survey, which took on average approximately 30 minutes. Of the recruited participants, 336 successfully completed the survey (results from those who did not finish the survey, or who spent fewer than 10 minute answering the questions were excluded from final analyses). The final sample resulted in 336 participants (44.6% male; ages 19–78 years; $M_{age} = 36.61$). Participants self-identified as the following: 76.2% Euro-American Caucasian, 11.0% African American, 7.7% Asian, 6.0% Hispanic/Latino, 1.2% Indian/Native American. Annual household income variability is as follows: 11.6% less than \$15,000; 25.3% \$15,000–\$30,000; 21.7% \$30,000–\$50,000; 19.0% \$50,000–\$75,000; 12.5% \$75,000–\$100,000; 9.8% over \$100,000.

Measures

Participants completed measures regarding social desirability, basic needs, their ethical orientation, and interpersonal characteristics.

Social Desirability

The shortened Marlowe-Crowne Social Desirability Scale was used to assess social desirability (Crowne & Marlowe, 1960; eight items, e.g., “Are you quick to admit making a mistake?”). Responses were rated on a 3-point Likert-type scale (1 = *No*, 2 = *Don’t know*, 3 = *Yes*).

Basic Needs

We used the Basic Needs Satisfaction Survey (described in Chapter 2), which has two subscales: Effectance (11 items, e.g., “People care about me”; $\alpha=.87$) and Discouragement (8 items, e.g., “My life is meaningless”: $\alpha=.88$) using a Likert-type scale (1 = *Strongly disagree*, 5 = *Strongly agree*). High scores indicated higher agreement toward each construct.

Childhood Experience Measures

Measures of adverse childhood experiences, attachment style, and early developmental environment were included. Unless otherwise noted, mean scores were used in analysis.

Attachment

Attachment style was assessed using the Relationships Questionnaire (Bartholomew & Horowitz, 1991). This instrument contains four paragraph long descriptions of each of the attachment styles (secure, fearful avoidant, preoccupied, and dismissive avoidant) and asks participants to first select the description that best describes them, and four additional items, rate the extent to which each description corresponds to their general relationship style. The ranking was on a 7-point Likert-type scale (1 = *Not at all like me*, 7 = *Very much like me*). Secure attachment was measured using the ranking provided for the secure prototype and insecure attachment was a mean of the other three items added together.

Evolved Developmental Niche

Early developmental environment was assessed using The Evolved Developmental Niche History measure (EDNh; Narvaez, Wang, et al., 2016), a self-report measure of adult recollections of childhood experiences (before age 18) consistent with the evolved developmental niche. Two questions assess the frequency of *social embeddedness* (doing things together as a family outside the home and inside the home, respectively; $r=.58$). Two questions asked about *self-directed play*: free play outside, and free play inside ($r=.55$). Three additional questions address perceptions of *responsiveness* (happy, supportive, needs met; $\alpha=.93$). *Affectionate touch* (hugs and kisses) and *corporal punishment* (spanking and other forms of negative touch) were each assessed with one item. To measure home climate, questions were included about common

feelings experienced, six negative (grief, humiliation, guilt, fear, anger, and numbness) and four positive (joy, expansiveness, self-assurance, and serenity) sets for which means were used to form a *negative home climate* variable ($\alpha = .91$) and a *positive home climate* variable ($\alpha = .88$).

Ethical Orientations

Ethical orientation was assessed according to Triune Ethics Meta-Theory (Narvaez, 2008, 2014) which identifies three evolved, neurobiologically rooted global mindsets that underlie different ethics. We used the Triune Ethics Orientations (TEO; Narvaez & Hardy, 2016). The first orientation, *general safety*, is based on in-born instincts for survival and leads to self-protective actions. The second orientation, *social engagement*, is based on nurtured “mammalian” emotional systems that facilitate face-to-face egalitarian attunement with others. The third orientation, *reflective imagination*, is based on capacities for abstraction from the present moment, allowing for solving problems beyond the concurrent self-in-relation. The Triune Ethics Orientation Measure presents a set of terms for each ethical orientation: For *general safety ethic*, the terms are “controlled, tough, unyielding, and competitive” ($\alpha = .93$); for *engagement ethic*: “caring, compassionate, merciful, and cooperative” ($\alpha = .90$); for *reflective imagination ethic*: “reflective, thoughtful, inventive, and reasonable” ($\alpha = .86$). The respondent is asked to “Please respond to your views of how you are in social situations” in response to a set of terms with four response items (e.g., “Other people I know think I have these characteristics”), using a 5-point Likert-type scale (1 = *Strongly Disagree* and 5 = *Strongly Agree*). Higher scores indicate a higher affiliation with each ethic.

Interpersonal Capacities

The Interpersonal Reactivity Index (Davis, 1983) was designed to capture differing aspects of empathy. It was used here to capture emotional *empathy* (7-items, e.g., “I often have tender, concerned feelings for people less fortunate than me” $\alpha = .88$), cognitive empathy or *perspective taking* (7-items, e.g., “I sometimes try to understand my friends better by imagining how things look from their perspective;” $\alpha = .87$) and *personal distress* (7-items, e.g., “Being in a tense emotional situation scares me” $\alpha = .87$). All three were rated on a 5-point Likert-type scale (1 = *Does not describe me well*, 5 = *Describes very well*). Higher scores indicating higher endorsement of each construct.

RESULTS AND DISCUSSION

In this study, we tested whether basic needs satisfaction was related to childhood experience (attachment, evolved developmental niche history), interpersonal capacities (empathy, perspective taking, personal distress), as well as ethical orientation according to triune ethics meta-theory (general safety, engagement, reflective imagination).

One question not used in the analyses concerned whether the respondent had been breastfed and 78 (23.2%) said they did not know. Breastfeeding initiation was not significantly related to the two subscales of basic needs (Effectance: $r = -.02$; Discouragement, $r = .02$), nor to perspective taking ($r = -.02$), empathic concern ($r = .01$), general safety ethic ($r = .11$), engagement ethic ($r = .10$), or reflective imagination ethic ($r = .07$), although it was related to personal distress ($r = .16$, $p < .01$). As a result, we did not include this variable in the analyses.

For means and standard deviations, see Table 4.3. Bivariate correlations are presented in Table 4.4.

Correlations among variables were largely in the direction expected, apart from breastfeeding. Scores representing supportive childhood experiences (secure attachment, social embeddedness, affectionate touch, self-directed play, responsiveness, and positive home climate) were positively correlated with Effectance and scores measuring relational morality: empathic concern, perspective taking, and engagement. Supportive childhood experience scores were negatively correlated with Discouragement whereas self-protectionist variables were positively correlated, such as personal distress (an indicator of neurobiological self-concern that can be formed from early undercare or trauma) insecure attachment, and negative home climate. Although Discouragement and the other negative variables were correlated in expected directions with moral variables, corporal punishment was not significantly related to any moral outcome. The only measure that did not follow expectations was general safety ethic—basic needs and childhood experience variables were unrelated. One can argue that this general safety orientation may be a general cultural value these days in the United States (Narvaez, Mattan, MacMichael, & Squillace, 2008).

We also wanted to examine the relationship between early experience and the relational attunement represented by the engagement ethic as mediated by basic needs satisfaction. Mediation analysis was used to test the hypotheses that BNSS would mediate the relationship between the

Table 4.3 Study 1 means, standard deviations, ranges for basic needs effectance and discouragement, precursors, and relational morality

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Life effectance	3.95 (0.64)	1.36	5.00
Life discouragement	2.28 (0.85)	1.00	4.88
<i>Precursors</i>			
Secure attachment	4.41 (2.12)	1.00	7.00
Insecure attachment	3.38 (1.15)	1.00	7.00
Affectionate touch	3.45 (1.13)	1.00	5.00
Corporal punishment	2.69 (1.22)	1.00	5.00
Responsive social environment	3.65 (1.11)	1.00	5.00
Self-directed play	3.77 (0.86)	1.00	5.00
Social embeddedness	2.32 (0.94)	1.00	5.00
Positive home climate	3.12 (0.78)	1.00	6.00
Negative home climate	3.65 (0.76)	1.00	6.00
EDNh composite	3.16 (0.49)	1.42	4.28
<i>Relational Morality</i>			
Perspective taking	3.68 (0.79)	1.14	5.00
Empathic concern	3.86 (0.76)	1.57	5.00
Personal distress	2.44 (0.84)	1.00	5.00
General safety ethic	2.59 (1.04)	1.00	5.00
Engagement ethic	4.13 (0.66)	1.20	5.00
Reflective imagination ethic	4.10 (0.62)	1.60	5.00

Note $N = 336$

composite score of evolved developmental niche history (EDNh) and engagement ethic orientation. Two models were constructed to test this relationship, one using Effectance and one using Discouragement. Figures 4.1 and 4.2 illustrate the unstandardized coefficients for each model.

When testing Effectance as the mediator, there was no significant direct effect of EDNh on engagement ethic, however when testing Discouragement as the mediator, EDNh had a direct effect on engagement ethic ($b = .17$, $p = .005$) Further, although total effects are not necessary for mediation (Hayes, 2009), total effects were significant in both models.

The two mediation analyses suggested that Effectance provided a complete mediating effect in the relationship between EDNh and engagement ethic, while Discouragement only provided a partial mediating effect. Since all three variables in each model were manifest variables, the fit indices were saturated in both cases.

Table 4.4 Study 1 correlations among basic needs effectance and discouragement, precursors, and relational morality

Variable	1	2	3	4	5	6	7	8	9
1. Effectance	—								
2. Discouragement	-.73**	—							
<i>Precursors</i>									
3. Secure attachment	.47**	-.41**	—						
4. Insecure attachment	-.33**	.48**	-.55**	—					
5. Affectionate touch	.35**	-.22**	.20**	-.08	—				
6. Corporal punishment	-.05	.11*	-.06	.09	-.22**	—			
7. Responsive social environment	.41**	-.35**	.26**	-.16**	.61**	-.39**	—		
8. Self-directed play	.26**	-.27**	.22**	.12**	.41**	-.15**	.42**	—	
9. Social embeddedness	.21**	-.22**	.12*	-.17**	.40**	-.18**	.48**	.37**	—
10. Negative home climate	-.29**	.40**	-.20**	.26**	-.34**	.47**	-.61**	-.27**	-.25**
11. Positive home climate	.49**	-.41**	.29**	-.20**	.56**	-.31**	.77**	.45**	.40**
12. EDNh composite	.41**	-.39**	.27**	-.21**	.73**	-.59**	.88**	.58**	.62**
<i>Relational Morality</i>									
13. Perspective taking	.33**	.25**	.19**	-.15**	.17**	.02	.14*	.11*	.15**
14. Empathic concern	.20**	-.24**	.21**	-.24**	.19**	-.07	.15**	.20**	.20**
15. Personal distress	-.41**	.49**	-.17**	.24**	-.10	-.08	-.13*	-.09	-.13*
16. General safety ethic	.07**	.03**	-.05**	.23**	-.03	.06	.06	-.03	-.05
17. Engagement ethic	.51**	-.32**	.27**	-.14**	.30**	-.03	.24**	.25**	.18**
18. Imagination ethic	.47**	-.29**	.17**	-.10**	.22**	.01	.16**	.20**	.20**
19. Social desirability	.11*	-.15**	.14*	-.09	.06	.01	.18**	.04	.10

(continued)

Table 4.4 (continued)

Variable	10	11	12	13	14	15	16	17	18	19
1. Efficance										
2. Discouragement										
<i>Precursors</i>										
3. Secure attachment										
4. Insecure attachment										
5. Affectionate touch										
6. Corporal punishment										
7. Responsive social environment										
8. Self-directed play										
9. Social embeddedness										
10. Negative home climate	—									
11. Positive home climate	-.52**	—								
12. EDNh composite	-.70**	.81**	—							
<i>Relational Morality</i>										
13. Perspective taking	-.10	.21**	.17**	—						
14. Empathic concern	-.11	.20**	.22**	.45**	—					
15. Personal distress	.23**	-.19**	-.14**	-.19**	-.06	—				
16. General safety ethic	-.02	.08	<.01	-.11**	-.27**	-.07**	—			
17. Engagement Ethic	-.10	.26**	.27**	.41**	.51**	-.20**	-.19**	—		
18. Imagination ethic	-.04	.27**	.21**	.42**	.34**	-.20**	-.05**	.61**	—	
19. Social desirability	-.15**	.22**	.14**	.08	.02	-.23**	-.01	.14*	.15**	—

Note N= 336. * $p < 0.05$, ** $p < 0.01$

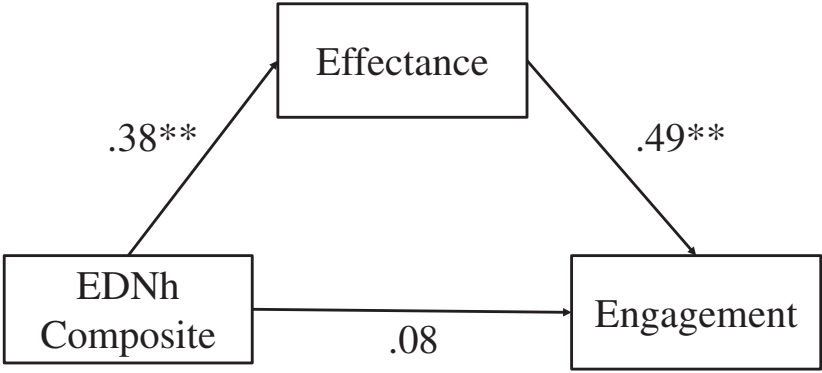


Fig. 4.1 Mediation model examining the mediating effect of basic needs effectance in the relation between Evolved Developmental Niche history (EDNh) composite and engagement ethical orientation

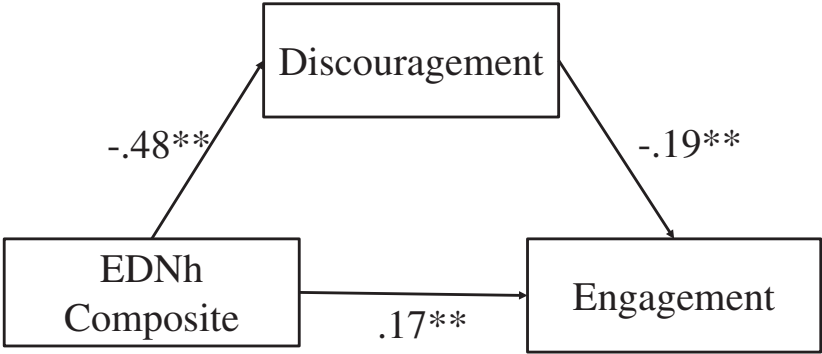


Fig. 4.2 Mediation model examining the mediating effect of basic needs discouragement in the relation between Evolved Developmental Niche history (EDNh) composite and engagement ethical orientation

We thought basic needs satisfaction might correlate with moral capacities because the latter are theoretically based on well-functioning neurobiology. This first study indicated that early experience matters for relational moral functioning. But many questions remained

unanswered. Also, childhood trauma is predictive of poor adult health (Felitti & Anda, 2005). Does childhood trauma, as measured by Adverse Childhood Experiences, correlate with lack of basic needs satisfaction? And do they both predict moral capacities, including moral behavior, better than basic needs satisfaction and EDN history?

STUDY 2

Study 1 served as an initial validation of our hypothesis that contemporaneous basic needs satisfaction would be related to retrospective reports of early experience. Because basic needs satisfaction was related to the supportive aspects of childhood and secure attachment and lack of basic needs satisfaction was related to the lack of evolved developmental niche and insecure attachment, we decide to go more deeply into examining the predictors and ramifications of these relationships. Does early experience influence moral personality, moral action, and worldview? Although in study 1 we tested interpersonal moral capacities (empathy, perspective taking, personal distress), we did not examine moral action. Is basic needs satisfaction related to other aspects of moral functioning, such as moral personality? We also wanted to examine whether basic needs satisfaction was related to worldview. Sylvan Tomkins (1965) suggested that early experience shapes one or another of two worldviews, humanistic or normative. He theorized that a welcoming and supportive childhood led to a humanistic posture toward the world (open and accepting toward others) worldview whereas harsh treatment by caregivers (fear of abandonment or humiliation) would lead to a normative worldview (a defended, rejecting posture that accesses feelings of anger and contempt more easily than affiliative feelings).

Method

Participants and General Procedure

A general population sample of 400 adults from the United States was recruited and paid through Amazon Mechanical Turk. Individuals were electronically provided with an explanation of the study, a consent form, and the study measures. All study measures were compiled into a survey that was administered in a single online session using Qualtrics. Those who decided to participate were paid about \$4.50 per hour for their

completion of the survey, which took on average approximately 40 minutes. The final sample included 374 of the recruited participants (excluding results from those who did not finish the survey, or who spent fewer than 15 minutes answering the questions). For the final sample ($n=374$; 52.1% male) participants ranged in age from 18 to 81 ($M_{\text{age}}=33.96$, $SD=11.07$). The racial/ethnic composition of the sample was as follows: 77.8% White, 8.0% African American, 10.4% Asian, 4.8% Hispanic/Latino, 1.6% Native American, 0.3% immigrant, 0.3% other. Yearly income varied substantially (10.2% reported less than \$15 K per year, 23.8% reported \$15–30 K, 27.5% reported \$30–50 K, 19.5% reported \$50–75 K, 11.0% reported \$75–100 K, and 8.0% reported over \$100 K).

Measures

Unless otherwise noted, mean composite scores were computed for analysis.

Childhood Experience Measures

Measures of adverse childhood experiences, attachment style, and early developmental environment were included to measure childhood experience.

Attachment

Attachment style was again assessed using the same measure as in study 1, the Relationships Questionnaire (Bartholomew and Horowitz, 1991), with a single-item for secure attachment a composite item for insecure attachment.

Evolved Developmental Niche

Early developmental environment was again assessed using selected items from The Evolved Developmental Niche History measure (EDNh; Narvaez, Wang, et al., 2016) used in study 1. Reliability estimates for this sample were as follows: “social embeddedness” ($r=.62$), self-directed play ($r=.59$), “responsive social environment” score ($\alpha=.92$), negative home climate ($\alpha=.90$) and positive home climate ($\alpha=.88$).

Adverse Childhood Experiences

Traumatic childhood experiences were measured using the short form of the Adverse Childhood Experiences scale (ACES; Felitti & Anda, 2005). Using one item for each trauma ($\alpha=.80$; *yes* or *no*), ACES measures ten

different types of childhood trauma (prior to their 18th birthday): five personal (i.e., physical abuse, verbal abuse, sexual abuse, physical neglect, and emotional neglect) and five related to other family members (i.e., alcoholic parent, mother victim of domestic violence, family member in jail, family member diagnosed with mental illness, and disappearance of parent). One point is added for each trauma experienced, such that the ACE score ranges from 0 (no experience with childhood trauma) to 10 (experience with all traumas mentioned).

Moral Variables

Moral personality and moral action, and ethical orientation were assessed in this study.

Moral Personality

Moral personality was assessed using two measures of socially cooperative personality, forgiveness and honesty, and two measures of uncooperative personality, distrust, and dominance. *Forgiveness* was measured using the Forgiveness subscale of the HEXACO Personality index (Ashton & Lee, 2008). The subscale consists of 10 items ($\alpha = .90$), four of which are positively keyed (e.g., “I love my enemies”) and six of which are negatively keyed (e.g., “I find it hard to forgive others”). We measured *honesty* using the Values in Action scale (Peterson & Seligman, 2004). The scale has nine items ($\alpha = .81$), five positive (e.g., “I am trusted to keep secrets”) and four negative (e.g., “I lie to get myself out of trouble”). *Distrust* was measured using items from the Distrust scale from the International Personality Item Pool (IPIP; Goldberg et al., 2006; 8 items, e.g., “I trust others”; 1 = *Strongly Disagree*, 5 = *Strongly Agree*). This scale has eight items ($\alpha = .92$; e.g., “I am wary of others”), three of which are reverse-scored (e.g., “I trust others”). We measured *social dominance* using the Dominance/narcissism subscale of the California Psychological Inventory (also from IPIP; Goldberg et al., 2006). This subscale has 10 items ($\alpha = .87$; e.g., “I impose my will on others”), with one item that is reverse-scored (e.g., “I hate to seem pushy”). All of the measures were scored using a 5-point Likert-type scale (1 = *Strongly Disagree* and 5 = *Strongly Agree*).

Ethical Orientation

Ethical orientation was again assessed with Triune Ethics Orientations (Narvaez & Hardy, 2016; Narvaez, Thiel, Kurth, & Renfus, 2016) but with several additional ethics: *oppositional ethic*: “combative, tough,

vigilant, and belligerent" ($\alpha = .92$); *withdrawal ethic*: "submissive, yielding, timid, and unassertive" ($\alpha = .86$); *detached imagination ethic*: "aloof, apathetic, withdrawn, and unemotional" ($\alpha = .90$); *vicious imagination ethic*: "domineering, aggressive, zealous, and pushy" ($\alpha = .92$); and *communal imagination ethic*: "humanitarian, neighborly, inclusive, and broad-minded" ($\alpha = .90$). As in study 1, also used were *general safety ethic* ($\alpha = .93$) and *engagement ethic* ($\alpha = .89$).

Moral Behavior

We assessed moral behavior using two measures. First, we used the *Past Action Report*, a measure based on Triune Ethics Meta-Theory (Narvaez, Thiel, et al., 2016). Participants rate how often in the past year they have performed particular actions (8-point Likert-type scale, 1 = *Never* and 8 = *Every day*). The list of actions was divided into seven groupings. The first group represents relationally attuned morality: *engaged communal behavior* ($\alpha = .86$; 7 items, e.g., "Gave a helping hand"). The other six groups represent self-protectionist behaviors: *oppositional behavior* ($\alpha = .91$; 10 items, e.g., "Felt justified in yelling at someone"), *vicious (imagination) behavior* ($\alpha = .85$; five items, e.g., "Made a plan to take revenge on someone"), *withdrawal behavior* ($\alpha = .90$; eight items, e.g., "Kept distant from others in a social situation") (*sense of*) *superiority behavior* ($\alpha = .65$; five items, e.g., "Felt competitive with a rival") (*social*) *weakness behavior* ($\alpha = .63$; four items, e.g., "Relied on someone else to speak for you"), and *emotionally detached (imagination) behavior* ($\alpha = .71$; seven items, e.g., "Focused on your work and not on the needs of others").

Second, we measured *public moral action* with the Public Moral Action for the Less Fortunate scale (Narvaez, Brooks, & Mattan, 2011) which asks participants to indicate how often in the past year they have performed certain public actions for the less fortunate (unspecified and undefined; e.g., "I have volunteered at an agency that helps the less fortunate") using an 8-point Likert-type scale (1 = *Never* and 8 = *Every day*; $\alpha = .86$).

Worldview

Worldview was evaluated using a revised version of the Tomkins Polarity Scale (Narvaez & Hardy, 2016). The scale is divided into two subscales: *humanistic* ($\alpha = .75$; 10 items; e.g., "Children must be loved so that they can grow up to be fine adults") and *normative* ($\alpha = .80$; 14 items; e.g., "Human beings should be loved only if they have acted so that they deserve to be loved"). Items are scored using a 5-point Likert-type scale (1 = *Strongly Disagree* and 5 = *Strongly Agree*).

Results and Discussion

In this study we probed more deeply into moral functioning and its predictors, examining in particular the role of basic needs satisfaction. Two variables were left out of tables and analyses, breastfeeding and ACEs. We asked participants whether they were breastfed and 90 (24.1%) said they did not know. Breastfeeding experience was not significantly related to any variables; correlations were nonsignificant and ranged from $-.003$ to $.06$. As a result, we did not include this variable in the analyses. Second, ACEs was not significantly correlated with moral outcomes (correlations ranged from $-.08$ to $.06$) except for three variables: distrust ($r = .15$, $p = .003$), withdrawal behavior ($r = .18$, $p = .000$) and emotionally detached behavior ($r = .13$, $p < .01$). Both variables were not examined further.

For means and standard deviations of positive variables, see Table 4.5. For means and standard deviations of negative variables, see Table 4.6. Bivariate correlations are presented in Tables 4.5 and 4.6.

Table 4.5 Study 2 means, standard deviations, ranges for basic needs effectance and discouragement, positive precursors, and relational morality

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance	3.88 (0.65)	1.45	5.00
Discouragement	2.18 (0.88)	1.00	5.00
<i>Positive Precursors</i>			
Secure attachment	4.50 (2.12)	1.00	7.00
Social embeddedness	3.62 (0.95)	1.00	5.00
Self-directed play	3.17 (0.69)	1.00	5.00
Responsive social environment	3.60 (1.07)	1.00	5.00
Affectionate touch	3.24 (1.17)	1.00	5.00
Corporal punishment	2.60 (1.13)	1.00	5.00
Positive home climate	4.06 (1.12)	1.00	6.00
EDNh composite	4.16 (0.48)	1.82	4.16
<i>Relational Morality</i>			
Humanistic worldview	3.96 (0.51)	1.70	5.00
Honesty	4.12 (0.57)	2.11	5.00
Forgiveness	3.50 (0.85)	1.00	5.00
Communal imagination ethic	3.76 (0.83)	1.00	5.00
Engagement ethic	4.19 (1.25)	1.00	7.50
Engaged communal behavior	2.52 (1.22)	1.00	7.00
Public moral action for the less fortunate	3.67 (0.66)	1.70	5.00

Note $N = 367$. * $p < 0.05$, ** $p < 0.01$

Table 4.6 Study 2 means, standard deviations, ranges for basic needs effectance and discouragement, negative precursors, and self-protective morality

<i>Variable</i>	<i>Mean (SD)</i>	<i>Minimum</i>	<i>Maximum</i>
Effectance	3.88 (0.65)	1.45	5.00
Discouragement	2.18 (0.88)	1.00	5.00
<i>Negative Precursors</i>			
Insecure attachment	3.34 (1.44)	1.00	6.50
Adverse childhood experiences	0.18 (0.23)	0.00	0.90
Corporal punishment	2.60 (1.13)	1.00	5.00
Negative home climate	2.80 (0.99)	1.00	6.00
<i>Self-Protective Morality</i>			
Normativism worldview	2.41 (0.56)	1.07	3.93
Dominance	2.47 (0.74)	1.00	5.00
Distrust	2.65 (0.86)	1.00	4.88
Oppositional ethic	1.91 (0.96)	1.00	5.00
Withdrawing ethic	1.96 (0.90)	1.00	4.75
General safety ethic	2.59 (1.09)	1.00	5.00
Vicious imagination ethic	1.58 (0.77)	1.00	5.00
Detached imagination ethic	1.80 (0.87)	1.00	4.75
Oppositional behavior	1.77 (0.99)	1.00	6.20
Vicious behavior	1.63 (1.00)	1.00	6.60
Withdrawal behavior	3.47 (1.67)	1.00	8.00
Superiority behavior	2.87 (1.26)	1.00	7.00
Weakness behavior	2.90 (1.30)	1.00	7.00
Detached behavior	3.35 (1.30)	1.00	7.43

Note N=367. * $p < 0.05$, ** $p < 0.01$

Were Supportive Childhood Experiences Correlated with Relational Morality?

In Chapter 3, we presented data showing that supportive childhood experiences consistent with reported EDNh correlated with the satisfaction of basic psychosocial needs in childhood. Here we tested EDNh but also attachment. Secure attachment was positively correlated with all moral outcomes, with the exception of Public Moral Action for the Less Fortunate. EDNh variables largely showed positive relations with ethical orientation, personality and behavior, suggesting that provision of supportive childhood basic needs contributes to moral outcomes. However, there were exceptions. EDNh affectionate touch was not related to Engagement or Public Moral Action for the Less Fortunate. The other EDNh variables were not correlated with Engaged Communal Behavior and Public Moral Action for the Less Fortunate, suggesting other factors

may be involved in shaping these behaviors. In a sample of 295 adults, Narvaez, Thiel, et al. (2016) found that Public Action for the Less Fortunate scores were significantly positively correlated with reported opposition behavior (.19), social weakness behavior (.17), and vicious behavior (.27) as well engaged communal behavior (.63). So, helping others is not confined to those who are more communally focused, but can be moral behavior that emerges from different moral orientations.

Were Unsupportive Childhood Experiences Related to Self-Protective Moral Outcomes?

We examined the relation between unsupportive early experiences and self-protective moral outcomes. Insecure attachment was positively correlated with all self-protective moral outcomes. Similar to Narvaez, Thiel, et al. (2016), corporal punishment was related to self-protective variables including distrust, oppositional ethic, detached imagination ethic, and all of the self-protective behavior variables and negative home climate was related to distrust, withdrawal ethic, vicious and detached imagination ethics, and all self-protective behavior except vicious behavior. These relations suggest that a perception of childhood basic needs dissatisfaction contributes to self-protective moral action.

Was Basic Needs Satisfaction Related to Supportive Childhood Experience and Relational Morality?

As shown in Table 4.7, Effectance was significantly related to all measures of supportive childhood experience, similar to the studies in Chapter 3. Effectance was also related to all moral outcomes variables, was most strongly related to honesty ($r = .50, p < .01$), except Public Moral Action for the Less Fortunate. Discouragement was significantly negatively related to all supportive childhood experience and moral variables: the strongest correlation was with honesty ($r = -.51, p < .01$), and the weakest were with engaged communal behavior ($r = -.11, p < .05$) and Public Moral Action for the Less Fortunate ($r = -.11, p < .05$).

Was Basic Needs Satisfaction Related to Negative Childhood Experience and Self-Protective Moral Outcomes?

As shown in Table 4.8, Effectance was negatively related to all measures of unsupportive childhood experience, similar to the studies in Chapter 3. Further, Effectance was negatively related to all self-protective moral outcomes variables, except general safety ethic. Effectance was most

Table 4.7 Study 2 correlations among effectance and discouragement, positive precursors, and relational morality

<i>Construct</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Effectance	—						
2. Discouragement	-.73**	—					
<i>Positive Precursors</i>							
3. Secure attachment	.38**	-.41**	—				
4. Social embeddedness	.20**	-.21**	.12*	—			
5. Self-directed play	.20**	-.14**	.18**	.31**	—		
6. Responsive social environment	.29**	-.29**	.30**	.43**	.34**	—	
7. Affectionate touch	.21**	-.22**	.26**	.42**	.31**	.63**	—
8. Positive home climate	.38**	-.32**	.37**	.43**	.392**	.75**	.54**
9. EDNh composite	.33**	-.34**	.33**	.63**	.53**	.88**	.85**
<i>Relational morality</i>							
10. Humanistic worldview	.42**	-.30**	.23**	.17**	.16**	.16**	.18**
11. Honesty	.50**	-.51**	.30**	.17**	.19**	.21**	.17**
12. Forgiveness	.32**	-.37**	.29**	.16**	.17**	.17**	.21**
13. Communal imagination ethic	.38**	-.32**	.34**	.14**	.08	.20**	.19**
13. Engagement ethic	.35**	-.29**	.41**	.14**	.15**	.25**	.22**
15. Engaged communal behavior	.17**	-.11*	.13*	.09	.14**	-.04	.09
16. Public moral action for the less fortunate	.10**	-.11**	.06**	.06	.01	-.06**	.04**

(continued)

Table 4.7 (continued)

Construct	8	9	10	11	12	13	14	15
1. Effortance								
2. Discouragement								
<i>Positive Precursors</i>								
3. Secure attachment								
4. Social embeddedness								
5. Self-directed play								
6. Responsive social environment								
7. Affectionate touch								
8. Positive home climate	—							
9. EDNh composite	.81**	—						
<i>Relational morality</i>								
10. Humanistic worldview	.24**	.21**	—					
11. Honesty	.26**	.27**	.39**	—				
12. Forgiveness	.17**	.23**	.43**	.39**	—			
13. Communal imagination ethic	.24**	.23**	.35**	.37**	.38**	—		
13. Engagement ethic	.24**	.26**	.44**	.38**	.55**	.55**	—	
15. Engaged communal behavior	.04	.04	.29**	.11*	.25**	.32**	.40**	—
16. Public moral action for the less fortunate	-.06	-.01	.11**	.02**	.19**	.26**	.21**	.55**

Note N=367. * $p<0.05$, ** $p<0.01$

Table 4.8 Study 2 correlations among effectance and discouragement, negative precursors, and self-protective morality

Variable	1	2	3	4	5	6	7	8	9
1. Effectance	—								
2. Discouragement	-.73**	—							
<i>Negative Precursors</i>									
3. Insecure attachment	-.30**	.40**	—						
4. Adverse childhood experiences	-.16**	.19**	.14**	—					
5. Corporal punishment	-.14**	.19**	.17**	.43**	—				
6. Negative home climate	-.24**	.30**	.19**	.63**	.47**	—			
<i>Self-protective morality</i>									
7. Normativism worldview	-.21**	.26**	.23**	-.10	.03	-.04	—		
8. Dominance	-.06**	.22**	.18**	-.02**	.08**	.07	.49**	—	
9. Distrust	-.37**	.48**	.31**	.15**	.19**	.26**	.51**	.31**	—
10. Opposition ethic	-.14**	.17**	.16**	-.04**	.02**	-.03	.40**	.46**	.26**
11. Withdrawal ethic	-.27**	.32**	.20**	-.01	.08	.13*	.08**	-.18**	.12*
12. General safety ethic	.04**	.08**	.14**	-.10**	.03**	-.05	.43**	.51**	.21**
13. Vicious imagination ethic	-.24**	.26**	.19**	.04	.05	.11*	.40**	.55**	.26**
14. Detached imagination ethic	-.40**	.47**	.32**	.16**	.10**	.28**	.30**	.29**	.39**
15. Oppositional behavior	-.34**	.42**	.26**	.04	.18**	.15**	.44**	.50**	.35**
16. Vicious behavior	-.29**	.35**	.24**	-.02**	.12**	.07	.45**	.48**	.30**
17. Withdrawal behavior	-.46**	.61**	.49**	.19**	.22**	.33**	.13*	.15**	.40**
18. Superiority behavior	-.15**	.31**	.31**	-.04**	.12**	.13*	.41**	.55**	.35**
19. Weakness behavior	-.29**	.39**	.34**	.00	.10*	.14**	.18**	.20**	.26**
20. Detached behavior	-.32**	.45**	.42**	.13**	.18**	.27**	.30**	.38**	.41**

(continued)

Table 4.7 (continued)

Variable	10	11	12	13	14	15	16	17	18	19
1. Effectance										
2. Discouragement										
<i>Negative Precursors</i>										
3. Insecure attachment										
4. Adverse childhood experiences										
5. Corporal punishment										
6. Negative home climate										
<i>Self-protective morality</i>										
7. Normativism worldview										
8. Dominance										
9. Distrust										
10. Opposition ethic	—									
11. Withdrawal Ethic	.03*	—								
12. General safety ethic	.41**	— .17**								
13. Vicious imagination ethic	.49**	.01	.37**							
14. Detached imagination ethic	.33**	.26**	.19**	.41**						
15. Oppositional behavior	.34**	.10	.33**	.40**	.28**					
16. Vicious behavior	.34**	.13**	.36**	.38**	.26**	.84**	—			
17. Withdrawal behavior	.13**	.34**	.09	.11*	.42**	.37**	.36**	—		
18. Superiority behavior	.35**	.07**	.40**	.29**	.28**	.61**	.62**	.47**	—	
19. Weakness behavior	.18**	.27**	.13*	.09	.25**	.45**	.48**	.69**	.57**	—
20. Detached behavior	.29**	.16**	.26**	.24**	.48**	.47**	.45**	.73**	.58**	.63**

Note N=367. * $p<0.05$, ** $p<0.01$

strongly negatively related to withdrawal behavior, $r = -.46$, $p < .01$. Similarly, except for general safety ethic, Discouragement was significantly positively related to all unsupportive childhood experiences, as found in the Chapter 3 studies. Discouragement was correlated with self-protective moral variables with its strongest correlate withdrawal behavior ($r = .61$, $p < .01$).

Hierarchical Regressions

To determine the extent to which BNSS scales contributed significantly to the explained variance in moral outcomes, beyond what was explained via childhood experience and attachment, several hierarchical regressions were performed. We conducted the regressions on the variables with the highest sets of correlations, which on the relational side were honesty, forgiveness, engagement, communal imagination; and on the self-protective side, distrust, oppositional behavior, and withdrawal behavior. For each regression, we used the same sets of predictors. Model 1 predictors were EDNh variables: positive home climate, negative home climate, affectionate touch, and corporal punishment. Model 2 added secure and insecure attachment scores. Model 3 added the BNSS subscales, Effectance and Discouragement.

In the regression on *Honesty*, although positive home climate and insecure attachment had been predictive in the two earlier models (7 and 14%, respectively), when adding BNSS scales to the analysis. Effectance and Discouragement made a significant contribution to explained variance (30%), consuming all of the variance, making all other variables become nonsignificant. Honesty represents conscientiousness. See Table 4.9 in longitudinal studies, Grazyna Kochanska finds that a supportive relationship with mother (“mutually responsive orientation”) facilitates the development of conscience and cooperation (Kochanska 2002a, 2002b). Studies have found that as early as 2½ years of age, children begin tell lies as a self-protection mechanism (Newton, Reddy, & Bull, 2000). In one set of studies, older 4–8-year old children were more likely to tell the truth when experimenters gave an appeal to tell the truth, especially when there was no punishment mentioned whereas if punishment was mentioned, children were more motivated by social approval than by abiding by an internal standard of behavior (Talwar, Arruda, & Yachison, 2015). Some have found that positive parenting decreases adolescent lying (Darling, Cumsille, Caldwell, & Dowdy, 2006; Jensen, Arnett, Feldman, & Cauffman, 2004), specifically

Table 4.9 Hierarchical regressions predicting honesty

<i>Honesty</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.08 (.07)		6.24**
Negative home climate	−.08	.04	−.13			
Positive home climate	.10	.04	.20*			
Responsive social environment	−.04	.05	−.08			
Corporal punishment	−.02	.03	−.03			
Affectionate touch	.03	.03	.06			
<i>Model 2</i>				.15 (.14)	.08	16.33**
Negative home climate	−.06	.04	−.11			
Positive home climate	.07	.04	.13			
Responsive social environment	−.03	.05	−.05			
Corporal punishment	<.01	.03	−.01			
Affectionate touch	.01	.03	.03			
Secure attachment	.03	.02	.11			
Insecure attachment	−.11	.03	−.22**			
<i>Model 3</i>				.32 (.30)	.16	42.74**
Negative home climate	−.04	.04	−.07			
Positive home climate	.01	.04	.02			
Responsive social environment	−.02	.05	−.04			
Corporal punishment	<.01	.03	<.01			
Affectionate touch	.01	.03	.02			
Secure attachment	<.01	.02	<.01			
Insecure attachment	−.07	.03	−.13*			
Effectance	.02	.01	.28**			
Discouragement	−.02	.01	−.23**			

Note *N* = 367. **p* < 0.05, ***p* < 0.01

autonomy support and lack of controlling parenting (Bureau & Mageau, 2014). Thus, honesty has a strong relational support component, whose absence undermines the presence of honesty.

In the regression on *Forgiveness*, the second model explained 10% of the variance with affectionate touch and secure attachment significant predictors. In the third model, lack of Discouragement showed additional significant explanation of variance (16% total). See Table 4.10. It is hard to forgive when does not feel safe or well, whereas in early life affectionate touch fosters secure attachment and the latter helps one feel safe in the social world over the long term (barring later trauma). Forgiveness behavior has been negatively correlated with anxiety and depression

Table 4.10 Hierarchical regressions predicting forgiveness

<i>Forgiveness</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.06 (.04)		4.26**
Negative home climate	-.03	.06	-.04			
Positive home climate	.05	.06	.07			
Responsive social environment	-.04	.08	-.05			
Corporal punishment	-.05	.04	-.06			
Affectionate touch	.13	.05	.19**			
<i>Model 2</i>				.12 (.10)	.06	13.07**
Negative home climate	-.01	.06	-.02			
Positive home climate	-.01	.06	-.01			
Responsive social environment	-.02	.08	-.03			
Corporal punishment	-.04	.04	-.05			
Affectionate touch	.11	.05	.15*			
Secure attachment	.08	.03	.20**			
Insecure attachment	-.08	.04	-.11			
<i>Model 3</i>				.18 (.16)	.07	14.56**
Negative home climate	.02	.06	.02			
Positive home climate	-.05	.06	-.07			
Responsive social environment	-.01	.07	-.02			
Corporal punishment	-.03	.04	-.04			
Affectionate touch	.11	.05	.15*			
Secure attachment	.05	.02	.14*			
Insecure attachment	-.03	.04	-.04			
Effectance	.01	.01	.08			
Discouragement	-.03	.01	-.23**			

Note $N=367$. * $p<0.05$, ** $p<0.01$

(Hebl & Enright, 1993; Subkoviak, Enright, Wu, & Gassin, 1995), and positively correlated with life satisfaction (Hargrave & Sells, 1997; Poloma & Gallup, 1991) and mental health (Mauger, et al., 1992). Early experience contributes to mental health, both of which appear to triangulate with forgiveness behavior. Melanie Klein, in object relations psychoanalytic theory, implied that for psychic health one must repair normal mistaken notions about caregivers developed in infancy, a type of forgiveness (Karen, 2001; Klein & Strachey, 1997).

The third hierarchical regression on positive moral outcomes predicted *Communal Imagination Ethic*. See Table 4.11. Although in Model 1, positive childhood climate was significantly predictive, explaining 5% of the variance, in Model 2, secure attachment was the only

Table 4.11 Hierarchical regressions predicting communal imagination

<i>Communal imagination</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	R^2 (<i>adjusted</i>)	R^2 <i>change</i>	<i>F</i>
<i>Model 1</i>				.06 (.05)		5.02**
Negative home climate	.02	.06	.02			
Positive home climate	.15	.06	.20*			
Responsive social environment	<.01	.08	<.01			
Corporal punishment	-.03	.04	-.04			
Affectionate touch	.06	.05	.09			
<i>Model 2</i>				.14 (.12)	.07	15.13**
Negative home climate	.04	.06	.05			
Positive home climate	.08	.06	.11			
Responsive social environment	.02	.07	.02			
Corporal punishment	-.02	.04	-.03			
Affectionate touch	.04	.05	.05			
Secure attachment	.10	.02	.27**			
Insecure attachment	-.03	.04	-.04			
<i>Model 3</i>				.19 (.17)	.06	13.33**
Negative home climate	.05	.06	.06			
Positive home climate	.02	.06	.03			
Responsive social environment	.03	.07	.03			
Corporal punishment	-.02	.04	-.03			
Affectionate touch	.04	.05	.05			
Secure attachment	.08	.02	.21**			
Insecure attachment	<.01	.04	-.01			
Effectance	.03	.01	.26**			
Discouragement	<.01	.01	-.02			

Note $N=367$. * $p<0.05$, ** $p<0.01$

significant variable, explaining 12% of the variance. When Effectance and Discouragement were added, the variance explained increased to 17%. Again, supporting triune ethics meta-theory, a sense of “social security” in childhood—through a supportive, positive home climate that fosters secure attachment—establishes neurobiological systems that function well, allowing one to use higher order capacities for cooperative ends (communal imagination) rather than self-protectionism.

Next, hierarchical regressions were performed on self-protectionist moral outcomes: distrust, oppositional behavior and withdrawal behavior. First, we tested the same predictors indicated above with *Distrust*.

See Table 4.12. Affectionate touch was a positive predictor in model 1 ($adjR^2=.09$), whereas in model 2, attachment became the sole significant predictor (16%). When BNSS variables were added in model 3, only Discouragement remained as a significant predictor, explaining 26% of the variance. These findings align with neurobiological research showing that warm, affectionate touch helps infants development secure attachment (Ainsworth, Blehar, Waters, & Wall, 1978; Bates, Maslin, & Frankel, 1985; Leyendecker, Lamb, Fracasso, Schölmerich, & Larson, 1997; O'Connor, Sigman, & Kasari, 1992), especially when this touch is synchronized to the infant's cues (Feldman & Eidelman, 2004). Affectionate touch fosters the development of the oxytocin system which

Table 4.12 Hierarchical regressions predicting distrust

<i>Distrust</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	R^2 (<i>adjusted</i>)	R^2 <i>change</i>	<i>F</i>
<i>Model 1</i>				.10 (.09)		8.35**
Negative home climate	.10	.06	.12			
Positive home climate	-.07	.06	-.09			
Responsive social environment	<.01	.08	<.01			
Corporal punishment	.06	.04	.08			
Affectionate touch	-.10	.05	-.14*			
<i>Model 2</i>				.17 (.16)	.07	15.49**
Negative home climate	.08	.06	.10			
Positive home climate	-.01	.06	-.01			
Responsive social environment	-.02	.08	-.03			
Corporal punishment	.04	.04	.06			
Affectionate touch	-.08	.05	-.11			
Secure attachment	-.06	.02	-.15*			
Insecure attachment	.13	.04	.17**			
<i>Model 3</i>				.27 (.26)	.10	25.36**
Negative home climate	.04	.06	.05			
Positive home climate	.03	.06	.04			
Responsive social environment	-.03	.07	-.04			
Corporal punishment	.04	.04	.05			
Affectionate touch	-.07	.04	-.10			
Secure attachment	-.03	.02	-.08			
Insecure attachment	.06	.04	.08			
Effectance	<.01	.01	-.03			
Discouragement	.04	.01	.35**			

Note $N=367$. * $p<0.05$, ** $p<0.01$

facilitates sense of trust in others (Carter, 2003; Feldman, Gordon, & Zagoory-Sharon, 2010; Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005). The lack of affectionate touch undermines the development of secure attachment and can lead to discouragement.

Next, we used *Oppositional Behavior* as the dependent variable (see Table 4.13). In Model 1, corporal punishment was positively and affectionate touch negatively predictive, accounting for 7% of the variance. In Model 2, insecure attachment also added to the variance explained (9%). When adding the two basic needs variables in Model 3, all three variables remained significant with Discouragement adding a great deal more explanation of the variance (20%). As noted earlier, considerable evidence indicates that corporal punishment fosters aggressive behavior

Table 4.13 Hierarchical regressions predicting oppositional behavior

<i>Oppositional behavior</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	<i>R</i> ² (<i>adjusted</i>)	<i>R</i> ² <i>change</i>	<i>F</i>
<i>Model 1</i>				.06 (.05)		4.88**
Negative home climate	.07	.07	.07			
Positive home climate	<.01	.07	<.01			
Responsive social environment	.08	.09	.09			
Corporal punishment	.13	.05	.14*			
Affectionate touch	-.17	.06	-.20**			
<i>Model 2</i>				.11 (.09)	.04	8.79**
Negative home climate	.06	.07	.06			
Positive home climate	.03	.07	.04			
Responsive social environment	.07	.09	.07			
Corporal punishment	.11	.05	.12*			
Affectionate touch	-.15	.06	-.17**			
Secure attachment	-.01	.03	-.02			
Insecure attachment	.18	.05	.21**			
<i>Model 3</i>				.22 (.20)	.11	25.75**
Negative home climate	.01	.07	.01			
Positive home climate	.10	.07	.11			
Responsive social environment	.05	.09	.06			
Corporal punishment	.10	.05	.12*			
Affectionate touch	-.14	.05	-.16**			
Secure attachment	.03	.03	.06			
Insecure attachment	.10	.05	.12*			
Effectance	-.02	.01	-.12			
Discouragement	.04	.01	.30**			

Note *N* = 367. **p* < 0.05, ***p* < 0.01

(Gershoff, 2013). And, according to triune ethics meta-theory, without affection and the development of secure attachment, the individual may not develop the prosocial inclinations and skills that otherwise form within an evolved developmental niche.

Last, we tested the same variables to predict *Withdrawal Behavior* (See Table 4.14). In Model 1, negative home climate was a significant predictor, accounting for 11% of the variance. In Model 2, negative home climate continued to be significantly predictive along with secure attachment negatively and insecure attachment positively predicting withdrawal behavior with the model explaining 34% of the variance. When adding the basic needs variables in Model 3, the amount of variance explained

Table 4.14 Hierarchical regressions predicting withdrawal behavior

<i>Withdrawal behavior</i>						
<i>Model</i>	<i>b</i>	<i>SE</i>	β	R^2 (<i>adjusted</i>)	R^2 <i>change</i>	<i>F</i>
<i>Model 1</i>				.12 (.11)		10.07**
Negative home climate	.55	.12	.32**			
Positive home climate	-.09	.11	-.06			
Responsive social environment	.17	.15	.11			
Corporal punishment	.13	.08	.09			
Affectionate touch	-.04	.09	-.03			
<i>Model 2</i>				.35 (.34)	.23	64.03**
Negative home climate	.47	.11	.28**			
Positive home climate	.12	.10	.08			
Responsive social environment	.09	.13	.06			
Corporal punishment	.08	.07	.05			
Affectionate touch	.05	.08	.03			
Secure attachment	-.22	.04	-.27**			
Insecure attachment	.45	.08	.31**			
<i>Model 3</i>				.50 (.49)	.15	54.17**
Negative home climate	.37	.09	.22**			
Positive home climate	.22	.09	.14*			
Responsive social environment	.07	.11	.04			
Corporal punishment	.07	.06	.05			
Affectionate touch	.07	.07	.05			
Secure attachment	-.15	.04	-.18**			
Insecure attachment	.29	.07	.20**			
Effectance	-.01	.01	-.04			
Discouragement	.10	.01	.42**			

Note $N=367$. * $p<0.05$, ** $p<0.01$

increased to 49% with the same variables remaining significant and Discouragement adding to the variance explained. Interestingly, positive home climate also became predictive even though it had been negatively correlated with withdrawal behavior. Social withdrawal or dissociation is a common outcome for traumatized and psychically disturbed individuals in therapy and is fostered by basic needs being thwarted in early life (Schoe, 2003b, 2013).

The dependent variables for the regressions represented dispositional traits and recent past behavior. In the hierarchical regressions, the most impactful variables of the EDNh were the positive and negative climate variables and the touch variables. The climate variables represent the marinade of emotion the individual recalls experiencing which would play a role in shaping dispositions, which the predictor variables represent. The only variable for which negative home climate remained a significant predictor throughout the models was withdrawal (emotionally disengaged behavior). Emotional disengagement behavior in a negative home climate might be functionally adaptive. Touch variables have known effects. For example, affection fosters well-functioning neurobiology (e.g., oxytocin system), increasing a sense of calm and wellbeing (Carter, 2003; Feldman, 2012) whereas corporal punishment has known longitudinal effects on aggressive behavior (Gershoff, 2013; Gershoff, Lansford, Sexton, Davis-Kean, & Sameroff, 2012). Lack of affectionate touch was significant in models for oppositional and emotionally detached behavior. At least one attachment variable explained a significant amount of variance in every model, sometimes both. Attachment preference is a signal of social functioning capacities.

In most models, the basic needs variables contributed significantly to the explanation of the moral variables beyond what was explained by childhood experience and attachment orientation. One or the other (or both) basic needs variables explained a significant amount of variance in each final model, suggesting their usefulness as two subscales, instead of a single scale. Sometimes it was a lack of discouragement that was predictive, as for forgiveness. All the negative dependent variables were predicted by Discouragement whereas with the positive variables, Effectance was predictive for honesty and communal imagination behavior.

Overall, the fact that contemporaneous basic needs satisfaction contributed to predicting moral functioning reports for both positive (honesty, forgiveness, communal imagination behavior) and negative variables (distrust, oppositional behavior, detached behavior) suggests that even

though childhood-related variables appear to have significant predictive power, today's lived experience does too. But the legacy of childhood experience in basic needs satisfaction contemporaneously needs to be sorted out. That is, how much of basic needs satisfaction today has to do with what happened in childhood when neurobiological structures and personality dispositions were being established? And how much of that early shaping can be changed in adulthood? Teasing out the early effects from the later effects is challenging. For example, frequent hugs with partners lower blood pressure and heart rate in premenopausal women with higher oxytocin levels, suggesting both an early effect (basal oxytocin) and a contemporary effect (hugs) on health variables (Light, Grewen, & Amico, 2005). Of course, longitudinal studies from birth would be ideal but hard to fund, mount and maintain.

GENERAL DISCUSSION

Our goal was to examine how basic needs satisfaction is related to moral capacities and functioning. In two studies, we examined the added power of basic needs satisfaction to predicting moral functioning. With respect to moral outcomes, Effectance correlated positively with perspective taking, empathic concern, and compassionate morality (engagement) and negatively with personal distress and safety ethic. Additionally, Effectance predicted moral behaviors including engaged communal actions. Discouragement, on the other hand, correlated positively with personal distress, safety ethic, and vicious and detached imagination and predicted self-protective behaviors including actions reflecting viciousness, withdrawal, superiority, weakness, detachment, and oppositional behavior.

In terms of fostering relational moral behavior, focusing on basic needs satisfaction is more aligned with virtue theory. Other theories tend to emphasize reasoning (the deontology of Kohlberg's theory, or utilitarianism). In a virtue theoretical worldview, morality or virtue is not learned from books or observation alone but through immersed experience or apprenticeship, with a guide on the side. And the learning of moral virtues starts with our neurobiology. Truly, we are biosocial *becomings* because we are always in a state of growth and change—our sociality is shaped by our biological experiences in early life and the functioning of our biology influences our social functioning (Ingold, 2013). However, after early childhood, individuals can shape themselves by the activities they choose and by where they put their attention (Narvaez, 2014).

LIMITATIONS AND FUTURE DIRECTIONS

These two studies have several limitations. The basic needs satisfaction measure needs further development. Reports of childhood experience were retrospective, not prospective, and the data were collected cross-sectionally. Additionally, all measurements were self-reported, which can be subject to inflated views of the self, particularly regarding socially desirable traits such as moral personality. Last, without experimental data, no claims of causation can be made. Future studies would benefit from following a prospective design by studying participants longitudinally from childhood and using observational techniques to reduce self-report bias.

CONCLUSION

Assessment of basic psychosocial needs satisfaction may provide helpful insights into the understanding of moral orientation, especially when childhood experiences are considered. In the next chapter, we pull the ideas together and discuss Maslow's view of the ultimate goal of humanity.

NOTES

1. Elsewhere the first author points out how Darwin's list of moral sense components seems to be diminishing in the USA (Narvaez, 2016).
2. "Ethical" and "moral" are used interchangeably here.

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Basic Needs and Fulfilling Human Potential

Darcia Narvaez

Abstract Maslow spends a great deal of thinking and writing about human fulfillment, including reaching one's potential. After studying exemplars in literature and biography, as well as personal acquaintances, he described the nature of "self-actualization." The assumption of basic needs fulfillment is that one can then focus on self-actualization. We review his description and contrast the descriptions with our ancestral context, small-band hunter-gatherer societies. Then we examine the human capabilities approach which also emphasizes adult needs. We suggest that meeting the needs of babies is fundamental to potentialities for self-actualization and human capabilities. Meeting the needs of babies means following the evolved nest for the young. To make this clear, we present a baby bill of rights.

Parts of this chapter appeared in the first author's blog at Psychology Today (she owns the copyright).

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In this chapter, we review the nature of self-actualization, as Abraham Maslow understood it, inserting our understanding of humanity's ancestral context. Later we discuss an alternative view of basic needs, the human capabilities approach. Finally, we examine what is missing in both approaches—a focus on the very young and suggest how that might be remedied.

Maslow (1962) pointed to an essential human nature or inner core that is biologically based and intrinsic, unless frustrated or discouraged. “The more we learn about man’s natural tendencies, the easier it will be to tell him how to be good, how to be happy, how to be fruitful, how to respect himself, how to love, how to fulfill his highest potentialities” (p. 4). This book aims to do this—provide some insight into evolved natural tendencies and the evolutionary design to fulfill them. Maslow went on to say that with this knowledge we could solve many personality problems. We agree.

In this book, we have expanded the notion of basic needs fulfillment beyond the typical list studied (e.g., belonging, esteem) to include aspects that are known to construct human neurobiology—the evolved developmental niche in childhood (e.g., affection, positive climate).¹ We have hypothesized that these components represent a species-typical developmental system for human beings and that early experience that falls outside of these components may be termed a species-atypical developmental system (Narvaez, 2014, 2015, 2016, 2018a, 2018b, in press). Moreover, because of human malleability in early life, the characteristics of human nature that a species-typical system supports should vary from that of species-atypical systems. In Chapter 3, we showed that greater nest-consistent childhood experience was correlated with basic needs satisfaction in adulthood. In a way, the evolved nest provides another avenue into examining basic needs satisfaction, a magnifying glass to examine how basic needs are fulfilled. It is an external set of components that then relate to the construction of a well-functioning or healthy person and the feeling of needs satisfaction.

We used Susan Fiske’s (2004) BUCET list of basic needs (belonging, understanding, control, self-enhancement and trust). It should be noted that all of these are fostered at first in early life when children desire these needs fulfilled, propelling species-typical growth in a socially cooperative

manner. One might think that understanding comes later but this is not the case. The child builds neurobiological narratives that subconsciously guide social relations and views of self and the world people trustworthy? Am I safe in this world? (Narvaez, 2011).

The BUCET list does not necessarily reflect the highest orientation that Maslow identified, self-actualization. Human fulfillment takes a lifetime to reach and it best starts out with supportive relationships and climate.

HUMAN FULFILLMENT

“The thing to do seems to be to find out what you are really like inside, deep down, as a member of the human species and as a particular individual” (Maslow, 1970, p. 4).

Maslow’s Notion of Self-Actualization

Abraham Maslow (1962, 1970, 1971) assumed that lower level basic needs would allow the individual to focus on higher forms of basic needs. Maslow noted that self-actualization was only visible in older adults because many of the lower basic needs were still being pursued by adolescents, young and middle-aged adults.²

Maslow called the process of reaching human potential *self-actualization*. He gathered information about such people using interviews and historical analysis of a couple of dozen people he admired. He wrote about their characteristics in his books, *Motivation and Personality* (1970), *Toward a Psychology of Being* (1962), and *Farther Reaches of Human Nature* (1971). He also was interviewed in the 1968 film, “Maslow and Self-Actualization.”³ In the discussion below, we use these sources to describe the characteristics of self-actualizers.

We also compare Maslow’s list of characteristics with our evolutionary baseline, a helpful way to see what is species-typical. That is, we use human genus history, specifically in our ancestral context (99% of human genus existence in small-band hunter-gatherer communities), as a measure against which to make judgments about what is normal for humans. In the 99% we provided the evolved developmental niche, the developmental system for supporting optimal development. Anthropologists and others have described groups in modern times that lived like our 99%—small-band hunter-gatherers (SBHG). We can examine and compare their outcomes to self-actualizing characteristics.

How do characteristics of self-actualizers align with those of our evolutionary heritage as represented by SBHG? Below we go through Maslow's terms/descriptions and note how they are (or not) related to our evolved developmental niche (EDN) and evolved community life. Native American communities have many of the characteristics of SBHG even if they were complex hunter-gatherers. So, we will refer to them as appropriate. A summary of references can be obtained from Narvaez (2013), Deloria (2006), Cooper (1998) and Fry (2006).

More Efficient Perception of Reality and More Comfortable Relations with It

Maslow points out that neurotic people (the unhealthy) actually do not perceive the world effectively or correctly—they are cognitively wrong about themselves and the world. Notice how this point emphasizes healthy development, that healthy development is *normal* for well raised human beings, *not* the neuroticism that Freud (1933) ascribed to all human beings. From our examination of reports of those who are(were) raised and live(d) in our ancestral contexts, we concur: Neuroticism is not a universal human outcome.⁴

From what can be discerned from SBHG who provide the EDN, EDN-raised individuals are less neurotic or mixed up about how to live well, which we can see in societies that provide the evolved nest and do not traumatize their children (Narvaez, 2014, 2015, 2016). In these societies, who lived close to the earth, proper perception was required for survival. You would not last long without it.

Acceptance of Self, Others, Nature

Self-actualizing folks accept themselves and others as they are, without complaint or critique. They are not aggravated or threatened by difference. In the modern view, this is a sign of proper neurobiological development (lack of stress reactivity). For example, Maslow discusses how a self-actualized parent allows their children to blossom without interference or control. This is the usual way of raising children in small-band hunter-gatherer communities (SBHG) around the world (Hewlett & Lamb, 2005). Parents and community members assume the child has his or her own spirit guiding development and that much harm can come from interfering.

Spontaneity: Simplicity, Naturalness

Self-actualizers are not conventional. Maslow wrote:

Their ease of penetration to reality, their closer approach to an animal-like or childlike acceptance and spontaneity imply a superior awareness of their own impulses, desires, opinions, and subjective reactions in general. Clinical study of this capacity confirms beyond a doubt the opinion, e.g., of Fromm that the average normal, well-adjusted person often has not the slightest idea of what he is, of what he wants, of what his own opinions are. (Maslow, 1970, pp. 158–159)

Among SBHG, spontaneity is dominant—there are no set roles or demands made on individuals. The band spends minimal time gathering and hunting—in which individuals can freely participate or not on any given day—and instead spends the majority of time socializing with banter, dancing, singing, and story-telling.

Problem Centered

Self-actualizing people are more problem centered than ego centered. They also live with a wider breadth of vision, a larger frame of reference that brings about a certain serenity in everyday affairs. Within this larger frame, they focus on a mission in life, driven by a sense of duty or obligation.

In our 99%, serenity is the norm, as calm neurobiological structures underpin personality. However, a higher purpose may or may not be characteristic in our ancestral context. Some groups don't worry about such things (e.g., Everett, 2009) while others do (Australian Aborigenes; Lawlor, 1991). In Native American communities a larger framing of life, an attachment to the cosmos and a respect for life forces are built into daily ritual and form part of the adolescent's vision quest and transition to adulthood (Deloria, 2006).

A Quality of Detachment and Need for Privacy and Autonomy, Will, Active Agency: Independent from Culture and Environment

Self-actualizing people are less needy of others, and of their approval than are the non-self-actualizing. They make their own decisions. They are independent, focused on growth rather than on getting a good reaction from the community. Self-actualizing individuals are nonconformist unlike deficiency-motivated people who need others and their approval. (Note that the assumption here is that non-actualizers care about fitting in. But these days in the USA, we have an increasing number of people and families that are socially oppositional—they purposefully behave in ways to annoy the community; Derber, 2013; Mooney & Young, 2006; Robinson & Murphy, 2008.)

Interestingly, though SBHG adults are highly autonomous—doing their own thing as they will, like going on a walkabout for a few days—they are also highly communal. They are committed to group living and democratically discuss actions and decisions when in the group, which has no leaders and does not use coercion.

Continued Freshness of Appreciation

Self-actualizing people appreciate the beauty and uniqueness of their experiences. They feel grateful for everyday miracles (e.g., sunsets). They have rich subjective experiences, even of the same events. They are emotionally present to life experience. Anthropological research suggests similar findings in preindustrialized societies. For example, among Australian Aborigenes (Lawlor, 1991) this is clear as they sing their songlines day after day. Anthropologist Colin Turnbull (1962) described the “forest people” (Mbuti) as living in gratitude for the forest, which they treated like a beloved mother.

Common Mystic or Peak Experiences

According to Maslow, self-actualizers are more likely to have mystic experiences, “feelings of limitless horizons opening up to the vision, the feeling of being simultaneously more powerful and also more helpless than one ever was before, the feeling of great ecstasy and wonder and awe, the loss of placing in time and specie with, finally, the conviction that something extremely important and valuable had happened, so that the subject is to some extent transformed and strengthened even in his daily life by such experiences” (Maslow, 1970, p. 164). There are also milder forms that are commonly experienced by most people. Maslow noted that some self-actualizers did not have peak experiences at all (“nonpeakers”). Nonpeakers were more practically focused and he thought more likely to be crusaders, reformers, politicians, or workers whereas the “peakers” were more likely to be in the arts (poets, composers), philosophy or religion. Within preindustrialized societies, group dancing, and ceremonies that lead to trance are routine (Turner, 1985).

Gemeinschaftsgefühl

Gemeinschaftsgefühl is a word invented by Alfred Adler and refers to a feeling of identification with, sympathy and affection for humanity, like an older brother has for a younger sibling. The self-actualizing person has this attitude toward others who cannot see the truths that are so

clear to her. The wise elders in Native American communities have been described with this type of insight and patience (but also exasperation) towards the lesser aware adult members of the community (Cooper, 1998; WindEagle & RainbowHawk, 2003).

Deeper Interpersonal Relations

Self-actualizers are capable of deeper relationships than others—greater love, fusion, and less ego boundedness. They tend to have only a small circle of friends, usually who are close to being self-actualizers themselves. Among those in our ancestral conditions, this is hard to determine as the topic is not the usual focus of study.

A Democratic Character Structure

Self-actualizers have a democratic character structure: they do not seek power over others but have a sense of equality with and empathy towards others of good character, no matter their background. They are ready to learn from their encounters with anyone. This contrasts with the authoritarian personality which at the very least involves an emphasis on submitting to authority, including its values and beliefs, and aggression toward targeted outsiders, and is related to social dominance (Altemeyer, 1998). Authoritarians respond to events motivated to keep their worldview intact through resistance to change, managing uncertainty and threat with the use of rigid scripts for social life (“rubricizing” according to Maslow, 1970). (For a review, see Jost, Glaser, Jost, Kruglanski, & Sulloway, 2003).

SBHG societies are fiercely egalitarian. No one coerces another, even parents to children. It would be grounds for breaking off a relationship. Since they are not stress reactive, they would not easily shift into a self-protective mindset where authoritarianism seems good and right.

Discriminatory Between Means and Ends, Between Good and Evil

Self-actualizers are strongly ethical, and exhibit moral standards in their behavior, doing right and not doing wrong. They also enjoy the means as well as the ends. Similarly, SBHG expect others to share and not coerce others. They are known for their playfulness and enjoyment of everyday tasks.

A Philosophical, Unhostile Sense of Humor

The sense of humor among self-actualizers is not hostile (e.g., laughing when someone gets hurt), superior (focused on someone’s inferiority), or rebellious. They find humorous the human situation—humanity’s

pride, bustle, ambition, striving, and planning. Their humor can poke fun at the self, but not in a masochistic or clownlike way. Similar nonhostile humor has been described among SBHG.

Creativity

Each self-actualizer is creative in a unique way, and “into the naïve and universal creativeness of unspoiled children...greater freshness, penetration, and efficiency of perception....less inhibited, less constricted, less bound, in a word, less enculturated...more spontaneous, more natural, more human” (Maslow, 1970, pp. 170–171). As noted above, SBHG groups are often described as spontaneous and unscripted.

Resistant to Enculturation and Transcendence of Any Particular Culture

According to Maslow, self-actualizers do not approve of and identify with their culture—i.e., they are not well-adjusted (which is a healthy thing since the culture is contrary to wellbeing; Kidner, 2001). They do follow casual, superficial conventions (clothes, language, food). Though they may desire cultural change, they have accepted the slow pace of change. They have a detachment from American culture—“they weigh it, assay it, taste, and then make their own decisions” (p. 173). They have a “less than average need for the familiar and customary” (Maslow, 1970, p. 173). They are less “American” and more “members at large of the human species” (Maslow, 1970, p. 174).

Interestingly, SBHG have similar personalities and worldviews all over the world. Because early experience deeply shapes personality, we have suggested that the evolved nest, which SBHG provide, offers a “cultural commons” for the development of a calm, social and virtuous personality (Narvaez, 2014).

As the reader may have noted, many of us are taught not to self-actualize. We are taught not to follow our feelings and preferences, or even to know them. Lewin (1951) suggested that motives form a psychological force within particular situations that either facilitate (positive valence) or inhibit (negative valence) the individual’s goals. Thus there is a person-by-situation interaction of which motives operate when. From the studies presented in this book and elsewhere, we find that climate in childhood matters for establishing the self-actualizing self. If one is presented with negative valence for being oneself, one must go “underground” and present a false self to get by.

Becoming a Self-Actualizer

As Maslow noted, becoming a self-actualizer necessitates resurrecting one's true self—one's feelings, reactions, preferences—and learning to follow one's unique spirit. Maslow had advice for those who wanted to become self-actualizers. In his 1971 book, *The Farther Reaches of Human Nature*, he gave eight suggestions (written here in the second person).

Be Here

Experience your life “fully, vividly, selflessly, with full concentration and total absorption” (Maslow, 1971, p. 45). When you do this you are being wholly yourself and it is a moment of self-actualization. Avoid self-consciousness. Avoid shyness and postures. Let down your defenses. Throw yourself into the moment, into experiencing it with all your senses. As the first author has noted elsewhere (Narvaez, 2014), it helps to be in nature or to have a friend with whom you can be emotionally expressive—through silliness, music making or other forms of play.

All Day Long, Choose Carefully

Like wisdom traditions emphasize (Bourgeault, 2003), each moment in your life is one of choice—will you be open or defensive? Maslow opined that a dozen times a day you face the choice of moving toward self-actualization and growth or toward defense, safety, and staying afraid. The examples he uses are moral ones (honesty or dishonesty, steal or not steal) but choices involve everything you do—e.g., trying new foods/music/activities or how you approach others you meet.

You Are a Self: Know Your Self

Let your true self emerge. Shut out the noise of the world that tells you how you should think, feel, behave. Instead, pay attention to your own body's signals: “Does this taste good on *your* tongue?” (Maslow, 1971, p. 46). Do *you* like the flavor? Did *you* feel good or bad during the movie? Does your spirit like this activity? Does it feel good and right? Honor your own body and spirit's reactions instead of suppressing or silencing them. Listen to the inner voices that press you toward growth and connection.

“When in Doubt, Be Honest Rather Than Not” (Maslow, 1971, p. 46)

Avoid playing emotional games with others. Avoid posing to be accepted. Look inside for the real you. Take responsibility for your own feelings and reactions. Accept them. “Each time one takes responsibility, this is an actualizing of the self” (Maslow, 1971, p. 47).

Dare to Follow Your Unique Path

Most people do not listen to themselves and are not honest, making them unable to self-actualize. By listening to your inner self, by being honest about your own feelings and reactions, you inch closer toward better life choices. Each of the little choices will lead you to perceive what is truly better for you on your life path—what your mission and destiny are. “Making an honest statement involves daring to be different, unpopular, nonconformist...If clients, young or old, cannot be taught about being prepared to be unpopular, counselors might just as well give up right now” (Maslow, 1971, p. 47).

“Self-Actualization Is Not Only an End State but Also the Process of Actualizing One’s Potentialities” (Maslow, 1971, p. 47)

Self-actualization is demanding as it takes practice to become good at something. One must prepare, with all the prior steps, to reach the point of one’s full potential. One wants to aim to be first-rate at one’s life goal, whatever one’s inner self desires. One must work hard.

Set Up the Conditions for Peak Experiences

Find the places where you are “surprised by joy” (Lewis, 1955) and increase your exposure to those situations. Break up illusions and false notions—“learning what one is not good at, learning what one’s potentialities are not” (Maslow, 1971, p. 48) helps you discover yourself and find the realms where your peak experiences may be found.

Be Ready to Address Your Psychopathologies

“Finding out who one is, what he is, what he likes, what he doesn’t like, what is good for him and what bad, where he is going and what his mission is—opening oneself up to himself—means the exposure of psychopathology” (Maslow, 1971, pp. 48–49). One must find and dismantle the defenses set up against knowing oneself. One must face the unpleasantness so that one can heal and not be governed by defensive systems.

Maslow concludes his advice by saying that “self-actualization is a matter of degree, of little accessions accumulated one by one.” Self-actualizers, little by little, find out who they are and follow it not only in terms of spiritual direction and life path but what their unique biological nature is like (e.g., if beer keeps me up all night, I stop drinking it; if certain materials make me itch, I avoid them)—as noted earlier, this might be an easier place to start.

Maslow was focused on the hierarchy of basic needs and reaching self-actualization as a means to reach human potential for artistic enterprises and humanitarian causes. Like researchers examining social and moral exemplars whose lives contribute to the wellbeing of communities and society, it is not clear that positive psychology, an offshoot of humanistic psychology, has the broader societal context in mind (e.g., Peterson, 2006). As Kidner (2001) has pointed out, psychology seems mostly about helping people conform to the travesties of the modern situation. But other disciplines have moved into the discussion and promotion of wellbeing. The *human capabilities* approach is one such movement (Lessmann, Otto, & Ziegler, 2011).

In the Human Capabilities approach, freedom is the emphasis. Although Maslow placed freedom as a precondition for self-actualization: “freedom to speak, freedom to do what one wishes so long as no harm is done to others, freedom to express oneself, freedom to investigate and seek for information, freedom to defend oneself” and he adds conditions of “justice, fairness, honesty, orderliness in the group”; thwarting these freedoms, closely related to the basic needs, will trigger threat response (Maslow, 1970, p. 47). The Human Capabilities approach similarly emphasizes freedom, naming a particular list of basic freedoms. We examine that approach next.

HUMAN CAPABILITIES

The human capabilities approach also emphasizes human needs provision (Nussbaum, 2009; Sen, 1985). It is less a precise theory than a theoretical framework that integrates wellbeing, development, and justice. It emphasizes freedom to achieve wellbeing, shaped by an understanding of what individuals are able to do and be, and the lives they can lead. Unlike other models that emphasize subjectivity (e.g., happiness) or economic wellbeing, the capabilities approach extends the net of inclusion widely, including opportunities for education, political voice, play and other aspects of a full human life.

The human capabilities models that came out of economics and philosophical social justice addresses mostly adult capabilities. Nussbaum (2009) identifies ten central capabilities: life; bodily health; bodily integrity; senses, imaginations, and thought; emotions; practical reason; affiliation; other species; play; control over one's environment in political and material ways. We can organize these capabilities by our species heritages and contrast them with Maslow's list and our own list of evolved needs in early childhood. We also include biological rationale for the early life nest needs. See Table 5.1.

The framework distinguishes between *functionings* and *capabilities*. Functionings are the possible *beings* and *doings* or states and activities of a person. Beings include being well or malnourished, being educated or not, being depressed or content. Doings include working, voting, taking drugs, donating money, using lots of fuel for one's lifestyle. Capabilities are the opportunities to achieve functionings, the pathways to realizing functionings. Does one have the freedom to choose beings and doings? Can one make choices to avoid poverty and achieve wellbeing?

How do the human capabilities relate to children? When child concerns come up in these models, they mostly focus on issues of family planning and women's freedoms in regards to childbearing. Amartya Sen (1985, 1997) writes of generational differences in entitlements (social rights and obligations), capabilities (individual characteristics and social opportunities), and functionings (choice to exercise a capability in relation to societal entitlements). But usually the foci for children's lives are on restrictive or negative rights (not to labor, not to be sexually active) or child labor and obligations to attend schooling.

In terms of functionings, a baby is assumed to have no choice of functionings except to suckle. Societies vary in entitlements to the baby (e.g., to live beyond birth, circumcision). "Entitlements to State care and protection are often weak and passive compared to the power that lies in the hands of kin and local civil society. Infancy is a time of low obligations and uncertain rights" (Cameron, 2011, p. 112).

But, arguably, obligations grow at a faster rate than rights through childhood for many children. Formal obligations to attend school may be accompanied by the less formal obligation to work hard at school and, even, to perform well at school. From this perspective, the idealized "western" childhood can appear to be constructed out of proscriptions—obligations not to do this or that—with very few positive rights and little practice in choosing functionings.

Table 5.1 Comparison of basic needs lists from Maslow, Nussbaum, and the evolved nest

<i>Maslow's hierarchy of needs</i>	<i>Nussbaum's human capabilities</i>	<i>Humanity's evolved nest (sampling)</i>	<i>Neurobiological underpinnings of evolved nest (sampling)</i>
<i>Animal needs</i>			
PHYSIOLOGICAL: Air (breathing); Water; Food; Sleep; Clothing; Shelter; Sexual instinct	Life; Bodily health	Soothing perinatal period, breastfeeding, affection	Establishment of immune neuroendocrine, stress response systems
SAFETY and protection	Bodily integrity Control over one's environment in political and material ways Relation to other species	Responsiveness, no trauma Autonomy: Freedom to select relationships, move and act	Coordination of emotion systems (seeking, play)
Social belongingness	Affiliation	Nature embeddedness and connection <i>Mammalian needs</i>	Right hemisphere development
Love and affection		Community responsiveness and support Intersubjectivity with multiple adults Immersion in communal rituals Affection starting in babyhood	Sociality and morality shaped through limbic resonance, vagal tone, survival systems Tuning up of vagal tone and neuroendocrine systems Executive function development Species-typical capacities develop
Respect; Self-esteem; Identity	Play	From the beginning of life Respect of needs in babyhood Apprenticeship in adult activities <i>Human species needs</i>	
Self-actualization (self-fulfillment)	Senses, imaginations, thought; Emotions; Practical reason	Starting in babyhood; competence	Brain synapses and networks develop
Self-transcendence		"In arms" settling	Early right hemisphere development

Most human capabilities theorists emphasize choice and self-determination. Ballet, Biggeri, and Comin (2011): “The capability approach obviously implies the individuals’ capacity for self-determination” including letting them choose the lifestyle they prefer (p. 167). They point out that children are not mature enough to decide for themselves in the ways assumed necessary for self-determination (e.g., cognitive capacity). Scholars have addressed this issue in several ways: (1) Child wellbeing is not reliant on cognitive capacities or attitudes; (2) Look at the whole life cycle and how early experience influences adulthood, specifically the importance of education for adult autonomy; and (3) Although children can make choices they are unable to rationally evaluate and revise them. In contrast to these approaches, Ballet et al. (2011) offer an argument for children’s weak autonomy—to be able to make choices in a range of opportunities (e.g., a democratic school).

Volkert and Wust (2011) focus more specifically on early childhood experience. They name three aspects of the interaction between early experience provided by parents and the future capabilities of children: (1) Parental agentic freedom—whether they have the income, education, knowledge, time to provide what the child needs; (2) Activities that benefit the child (stimulation and social participation); and (3) conversion of the first two into a child’s social, emotional, cognitive capacities. They report on a study where they interviewed about 480 mothers of 2 to 3-year-olds regarding their child’s stimulation and social contact in the previous two weeks, using this as an outcome for parent agency (a capability). They point out that lack of agency would be coercion “to follow less desirable life plans, remain passive, submissive and desirous of pleasing or alienated from one’s own behavior” (Alkire, 2008; Sen, 1985).

Cameron (2011) identified capabilities that can be transmitted from older to younger generations through particular experiences. Political processes help the young development deliberative decision-making skills. Overcoming (with guidance) life crises builds capacities for forging self-confidence; learning to manage impairments; learning compassion through understanding the shared human condition; ethical judgment through moral decision-making; emotional intelligence through the sharing of strong emotion; emotional and physiological care for others; learning criteria for aesthetic judgment; fulfillment through skilled recreational activities. All these are provisioned by community living, much like the evolved developmental niche.

WHY YOUNG CHILDREN'S NEEDS DESERVE SPECIAL ATTENTION

As we showed in Chapters 3 and 4, early life experience influences not only health outcomes but social and moral capacities. Nevertheless, descriptions of early life needs are underdescribed in both Maslow's description of basic needs and the human capabilities literature. There is little sense of babies' freedoms or rights although there is a sense that early experience matters (Maslow, 1970). In the human capabilities literature, Sadlowski (2011) points to dynamism of development and the impact of early life experience on adult wellbeing and suggests that basic functionings (e.g., being in a household that fosters secure attachment) must be guaranteed to children: "For children the most basic capability is to live in caring, loving and stable relations" (p. 227). Not much detail is given for what that good home looks like.

Lewin (1951) suggested that motives form a psychological force within particular situations that either facilitate (positive valence) or inhibit (negative valence) the individual's goals. From the studies presented in this book and elsewhere, we find that climate in childhood matters for fostering the prosocial, but also the actualizing self—a self that feels effective and not discouraged. If a child is presented with negative valence for being herself, her true self must go "underground" and she must present a false self to get by. As Maslow noted, becoming a self-actualizer necessitates resurrecting one's true self—one's feelings, reactions, preferences—and learning to follow one's unique spirit.

Recall that humans have multiple inheritances including self-organization and the evolved nest (along with the genome, epigenome, developmental plasticity, biogenome, cultural, and ecological; Oyama, Griffiths, & Gray, 2001). In recent centuries, and especially recent decades in the United States, one inheritance seems to be winning out on all the others in terms of childrearing practices and effects: The cultural inheritance. Culture has been highly influential in determining the care that children receive leading to generations of undercared for mothers, fathers, and children—poorly setting them up for childrearing (by the way she was treated herself) influencing the child's epigenome (what genes are turned on and off; e.g., Gudsnuik & Champagne, 2012; Weaver, Szyf, & Meaney, 2002) and the biome (the microbes that maintain the immune system and influence wellness and sociality; e.g., Denou et al., 2011; Tilg, 2010). As we have noted in prior chapters, young children's

developmental support contributes to wellbeing for the long term. When needs are not met, it represents toxic stress (Shonkoff et al., 2012). Much like literature cited in early chapters about the neurobiological effects of early experience on health, wellbeing and sociomoral capabilities, a recent study suggests that basic physiological functioning, like muscle strength in adulthood, is shaped by early life experience (Cheval et al., 2018).

What do babies need to grow well? We have pointed to humanity's evolved developmental system, the evolved developmental niche or nest. Every animal evolved a nest for its young to match the maturational schedule of its young. The human nest reflects the basic characteristics of the social mammalian nest, which is over 30 million years old (Konner, 2005). It is especially intensive because of the vast immaturity of the human infant at birth, who needs another 18 months before acting like a newborn of most animals. As a result, humans are biosocially constructed from their postnatal experience. Early life is especially important for establishing neurobiological foundations and developmental trajectories. Epigenetic and plastic effects are occurring that lay the groundwork for capacities later (Siegel, 2012). As we described in Chapter 3, the evolved nest includes soothing perinatal experience, several years of breastfeeding, multiple responsive allomothers, a great deal of affection, positive social support for mother and child, self-directed play with others in the natural world. All these components have known neurobiological effects during the time period that is establishing multiple system functioning. In precivilized societies, wise elders commonly provided ongoing guidance (and relief) to new parents and the whole band was involved in child raising. In societies representing our ancestral context, adults display calmness and generosity, communalism and autonomy, and extensive resilience for physical hardship (Ingold, 2005). See Table 5.1 for a comparison of the evolved nest with Maslow's list and the human capabilities list of basic needs.

In economically advanced nations, infants are not receiving their due in multiple ways. Inadequate affectionate touch and emotional coregulation are accompanied by a lack of proper nourishment. The brain appears to require appropriate nourishment as provided by breast milk (Prescott, 1996). Human breast milk is the thin variety that is made up primarily of hormones that appear to keep the brain marinated, granted frequent breastfeeding, with thousands of body and brain building elements. The World Health Organization recommends at least two years of breastfeeding (but the average age of weaning in ancestral context is four

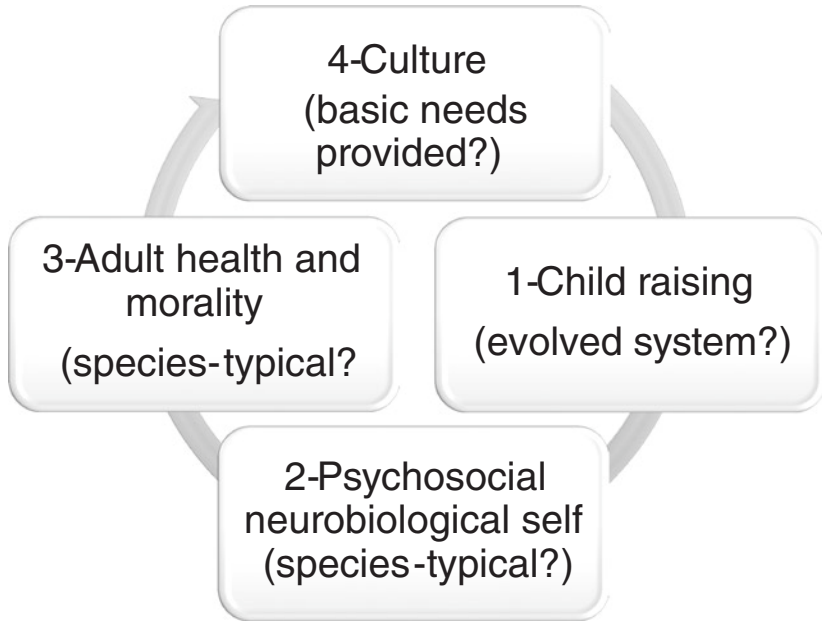


Fig. 5.1 The intergenerational cycle of basic need provision

years; Hewlett & Lamb, 2005). Additionally, infant brain development requires holding and carrying; (Mason, 1968; Mason & Berkson, 1975). Spitz (1965) showed that monkeys raised without mothers, whose brain development was threatened, were less harmed by isolation if they were rocked. Many modern societies are designed in ways that undermine mother-child bonding, breastfeeding and carrying of children throughout the day as evidenced by unprecedented amounts of child abuse, child suicide, and youth homicide in the twentieth century United States (e.g., Prescott, 1975, 1996).

Cultural and religious beliefs have put evolved mammalian caregiving on the sidelines and even counteracted it. Prescott (1996) came to the conclusion that most children in the United States are susceptible to Somatosensory Affectional Deprivation (SAD), a condition related to depression, violent behavior, and stimulus seeking. SAD comes about from a lack of affectionate touch in early life. The studies in Chapter 4 show some of these effects. Affectionate touch in childhood was

positively predictive of forgiveness, and negatively predictive of oppositional behavior after accounting for other factors such as home climate and attachment. Prescott related the pro-punishment and anti-pleasure in religious and cultural beliefs to the neglect of pleasurable touch and the promotion of negative touch.

Because current childrearing practices by most people most of the time do not match the baseline standard of the evolved nest, we can call it “undercare” (Narvaez, 2014). The term “undercare” was coined to distinguish it from “neglect,” a legal term that focuses mostly on physical and emotional wellbeing. Undercare specifically refers to the absence of one or more evolved nest components.

What does undercare do to the capacities that underlie human capabilities? Hughlings Jackson (1884) discussed how a disordered nervous system moves in reverse in terms of evolved functions. Development of the individual can be described as an internal evolution wherein missing functions, lesions, damage or disease are “a process of undevelopment, in the order from least organized, the most complex, and the most voluntary, toward the most organized, most simple, and most automatic.” Though the idea of “undevelopment” may not apply to all diseases it may usefully apply to early development. Modern societies often traumatize young children so that in effect they establish basic insecurity, physiologically and psychologically, forming a deficit mode, making it difficult to maintain openness and the processes of self-actualization Maslow described.⁵

Changing the Culture

David Korten, in his 2015 book, *Change the Story, Change the Future*, points out how a false story has taken over the dominating institutions of the world, controlling societies and international cooperation and approaches to planetary, cultural and ecological wellbeing. The false story is the Sacred Money and Markets Story (SMM), which considers money to be wealth, and money makers to be wealth creators around which social advantages should circle. This story infuses everything about modern societies, from media to textbooks to measures of success. However, this story ignores basic needs and actually destroys the real sources of wealth—ecological and social-relational systems. The old story that used to guide human societies is the Sacred Life and Living Earth Story before the SMM story was imposed around the world, understands that the earth is a living set of systems and that life exists only in

community. Wellbeing occurs when the basic needs of community members are met. Wealth is measured according to the wellbeing of individuals, communities and the natural world, not numbers on a computer.

This story aligns with the first author's view of the cyclical nature of basic needs provision. When the first author presents the evolved developmental niche and its effects to members of traditional collectivist societies, they nod their heads knowingly. Audience members from individualistic societies are often shocked and some protest that, for example, breastfeeding or touch cannot be important (they indicate they did not provide it to their children or do not want to). They did not receive such care, so how could it be important? The first author discusses this reaction as one of shifted baselines. The understanding of what children need has diminished, leading to neurobiological selves that are less than optimally shaped and adults whose wellbeing and sociomoral functioning are narrow and more self-focused, leading them to create or support a culture that keeps the cycle going. See Fig. 5.1.

Recall what Maslow said about culture: "Sick people are made by a sick culture; healthy people are made possible by a healthy culture. But it is just as true that sick individuals make their culture more sick and that healthy individuals make their culture more healthy" (Maslow, 1971, p. 5). Even if we do not want to call economically advanced cultures sick, we can still call them species-atypical. And with a species-atypical developmental system or nest, one attains species-atypical outcomes. The focus on intellect alone, the disregard of the body and its intuitions are signs of a suppressed nature, not of someone on the path to self-actualization.

As an addendum to his suggestions on aiming for self-actualization, Maslow discussed the importance of resacralizing what has been desacralized. Resacralizing means perceiving the sacred, eternal, poetic, symbolic in the people and entities that surround us—taking the perspective of eternity (Spinoza's idea). This notion of sacredness of life, especially children's spirits, is taken up by the *child honoring* approach.

Raffi Cavoukin, renown musician, has inspired the philosophy of *child honoring* (Cavoukian & Olfman, 2006) which focuses all policy and institutional decisions "through the lens of what best serves the needs of young children" (Olfman, 2006, p. xii). As a means to turn around humanity's and the planet's future prospects, the Child Honoring movement suggests a covenant for honoring children characterized by respectful love, diversity, caring community, conscious parenting, emotional intelligence, nonviolence, safe environments, sustainability, and ethical

commerce. These characteristics are a nice combination of human experiences that optimize development, like the evolved developmental niche, and the institutions that support such development.

In this way, we can move beyond the individual's experience within a family life constellation, to the expectation of the society and which basic needs it provides. In recent years, success at school has become a prominent focus of what children should be doing, even down to pre-schoolers, but Penelope Leach points out: "*the emphasis on cognitive rather than other aspects of development, and the reiterated use of that word 'education', constitute a wide-ranging area of risk*" that disempowers parents, grandparents and others who are oriented to playing with children, and "*Babies, toddlers and pre-school children will learn something (good, neutral or bad) from any experience that is shared with other people, adults and/or children, especially when they are sharing with 'personal people': parents or other loved adults*" (Leach, 2011, pp. 24–25).

What are the specific practices that communities ought to provide young children? Thinking about the specific experiences young children need to develop freedoms and capabilities and that optimize a child's development, we can use the evolved nest as a starting point. We suggest a *baby bill of rights*. See Fig. 5.2.

A baby's bill of rights needs to be accompanied by a mother's bill of rights. Mothers must be supported in many ways to be able to provide for their children. In fact, the community must expect to raise the child together, as it is not a mother-only or parents-only activity.

Beyond Babyhood

In other works, we have discussed early education, particularly how various popular approaches to early care settings align with the evolved nest and whether they support the basic needs of a developing human (Kurth & Narvaez, in press). A group care environment has the potential to provide a small community for which children to grow and flourish. As we noted in Chapter 4, what we know is fundamental to being human is social and emotional intelligence which comes from respect for and provision of basic needs in childhood, including during schooling (Elias, Ferrito, & Mocerì, 2016).

At the community level, Urie Bronfenbrenner (1979) was the first psychologist to spell out the layers of support systems and their interrelations that contribute to child wellbeing, with his *ecological systems*

1. Welcoming beginning with natural birth at full term (40–42 weeks)
2. **No induced pain** at birth or in childhood (e.g., no circumcision or corporal or emotional punishment)
3. **Infant - initiated breastfeeding** for several years
4. **Intensive maternal/caregiver contact from birth, with separations only initiated by the child**
5. **Caregivers who provide deep bonding and limbic resonance**
6. **Treatment as an equally - important person**
7. **Needs respected and met (responsive care)**
8. **Appreciation expressed through positive touch**
9. **To be embedded within the activities of a community 24 hours a day**
10. Community support to meet basic needs
11. Full autonomy as development allows
12. Spirit support (limited coercion)
13. **Opportunities for full sensory and intellectual development**
14. Deep contact with the natural world

Fig. 5.2 Proposed baby's bill of rights*

** Sometimes an emergency will make one or more impossible but every effort should be made to provide as many as possible to every child*

theory. The layers within the system include the microsystem (immediate settings including the family system, school, church, peers), the meso-system (interactions among immediate settings such as school and family interaction), the exosystem (the social ecology including mass media, social services, and local politics), and the macrosystem (attitudes and ideologies of the culture that are specific to the historical context). This approach emphasizes the impact of the various components of society, both immediate and distant that impact the growth of a developing human. Other initiatives have applied Bronfenbrenner's theory. The Search Institute (e.g., Benson, Galbraith, & Espeland, 1995) has been at the forefront of developing tools and methods for supporting basic needs across Bronfenbrenner's systems. The positive youth development initiative takes a holistic approach to provide for basic needs in adolescence for optimizing development (Lerner, Dowling, & Anderson, 2003). These initiatives fit well with the human capabilities approach.

CONCLUSION

Martha Nussbaum (1990) has argued for an Aristotelian Social Democracy—one where the society (state and government) bears responsibility for establishing conditions for the realization of human

capabilities. We suggest that more specifics about babies and child development be added, based in children's basic needs as social mammals. Most importantly, we need to include babies' rights and freedoms in any conception of societal wellbeing.

NOTES

1. The evolved nest for young children includes extensive breastfeeding and touch, multiple responsive caregivers and positive social support, soothing perinatal experience, and self-directed social play (Hewlett & Lamb, 2005).
2. It is unclear whether this phenomenon of late breaking self-actualization is a human species characteristic or whether it adheres to civilization or even only WEIRD societies where the evolved developmental niche is not provided and people wander into adulthood with primal wounds.
3. <https://www.youtube.com/watch?v=7DOKZzbuJQA>.
4. What is neuroticism? According to Maslow, neurotic needs include a desire to dominate, or to subject oneself to the will of another person. These are the predominant self-protective mechanisms we discussed in chapter x, that result from trauma or undercare. He also mentioned the desire to inflict pain. This more likely would be the effect of a "betrayal trauma" (overwhelming painful experiences inflicted by a person we are attached to or depend on for survival) (Freyd, 1994).
5. Modern societies often undermine children's confidence systematically by not giving them what they need and instead coercing them from a young age by, for example, force feeding them on adult-convenient schedules with bottles (little control over the liquid pouring down your throat, unlike with breastfeeding); forcing them to sleep alone, contrary to mammalian evolution; punishing them for not doing what adults want; denouncing their intuitions about the sentience of animals and plants as magical thinking, contrary to most societies for most of human history (Narvaez, 2014).

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EPILOGUE: THE FUTURE OF BASIC NEEDS FULFILLMENT

Darcia Narvaez

Basic needs fulfillment is fundamental to becoming human. Unlike other animals, humans are vastly shaped after birth (e.g., Gómez-Robles, Hopkins, Schapiro, & Sherwood, 2015; Trevathan, 2011). Born extremely immature, human beings have a great deal to be formed, with less and less plasticity over time, until adulthood (around age 30), so much so that early experience is critical for supporting the development of full human capabilities. Evolution (with what we call the evolved developmental niche) took care of this by shaping a developmental system that optimizes development over the course of maturation (e.g., Narvaez, Panksepp, Schore, & Gleason, 2013). Every human capacity is influenced by postnatal experience, grounded in neurobiological structures initialized and then co-constructed with caregivers.

Ethogenesis describes the development and shaping of the moral self, the ethical orientations, and moral capacities an individual displays and prefers across the lifespan (Narvaez, 2016, 2018). The species-typical pathway for *ethogenesis*, found in the societies that represent 99% of human genus history—small-band hunter-gatherers—includes *relational attunement* and *communal imagination*, the foundational components of cooperation that helped our ancestors survive, thrive and reproduce. The species-typical pathway requires basic psychosocial needs fulfillment during the course of development (with adulthood arriving around age 30), which is provided by the evolved developmental system or niche that we have examined in several chapters in this book.

Species-*atypical* pathways are shaped by toxic early stress, and their nature depends on the nature, timing, intensity, and duration of that stress. Lack of basic needs satisfaction in early life undermines the full development of capacities for relational morality and social cooperation. Instead, the individual is governed by the past—by the resultant conditioning to feel unsafe in the world, to become threatened in social situations, bracing against others instead of opening toward them. Rather than approaching social relations with a hospitable orientation toward others, the individual starts with basic distrust and employs self-protectionist measures, whether to suppress the true self or to control the other. Fear and insecurity drive aggression or disengagement, allowing bullies and sociopaths to run the world (Narvaez, 2014).

Today, children's basic needs are not being fulfilled—intentionally. Over the last decades, the world has been governed by neoliberalism philosophy in nearly every sector of social life (Harvey, 2005). Neoliberalism sacralizes so-called free markets, set up to give the power of citizenry over to corporate and oligarchic interests and, increasingly, to computer programs that focus on profits, using government money and power for militaristic endeavors to keep the status quo. It honors money and moneymakers over life and living systems (Korten, 2015). As a result, a “survival of the fittest” mentality rules the structure and functioning of social institutions—they support wealth and the wealthy while making everyone else compete to survive. These social institutions and social systems ensure that the basic needs of nearly every human being will *not* be met. What parent has time to attend kindly and responsively to the needs of a baby when they must juggle the demands of low-paying jobs, rent making, health care, transportation, government demands, getting enough sleep and food on the table, along with child raising—by themselves because of the absence of an extended compassionate family and community? Instead of a supportive niche or nest, children grow up in competitive environments (e.g., same-age groupings) starting with stranger daycare, followed by schools that follow neoliberalism's philosophy and a society that treats them as expendable. Parents and communities instead focus on how little can be provided children so they still get by and remain ‘resilient’ while adults are busy with neoliberalism's goals (competing over money making). This deterioration of expectations for living life represents a slippage of baselines for what is good/right for children and what can be expected from adults and societies (Narvaez & Witherington, in press).

As we have discussed in this book, thwarting basic needs produces toxic stress that has widespread and long-term effects on the mental and physical health of citizens, on their social capacities and preferences, and on their moral orientations—shaping the culture that emerges from these underdeveloped individual that moves further and further away from meeting the needs of its members, and building rationalizations and beliefs that ‘there is no other way’ (Christen, Narvaez, & Gutzwiller, 2017).

Even when an individual takes up a self-healing path, the challenges are many. There are capacities missing that were scheduled to develop in childhood and those sensitive periods have passed. Much like learning a language is more difficult after childhood, retraining one’s self-regulatory systems such as the vagus nerve or stress response after childhood takes a great deal of courage, self-discipline, and support (Narvaez, 2014).

What is needed is an awakening to the needs of young children, to the understanding that human nature itself is molded by an experience early on, and that sociomoral capacities are built on neurobiological foundations that must be set properly for full human potential to blossom. The perils are great—sociopathic institutions and individuals, born of the misunderstanding of child development and its intergenerational effects, are driving ecological and social crises and leading to planetary ruin. It is time to reshape priorities to supporting proper human development—human nature and the rest of nature depends on restoring the cultural commons for the development of our species-typical human nature.

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