A PARADIGM SHIFT WITHIN INTELLIGENCE

“Look deep into nature, and then you will understand everything better."

Albert Einstein.

I know that I am part of nature. I love nature's attractive ability to produce the perfection of its self-correcting balance and beauty. My reasonable attractions in natural areas help me register that nature's essence is the pure origin of my ability to

to love, to be attracted to nature or attracted to anything else.

Michael J. Cohen.

“I cannot grasp all that I am.”

Augustine.

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ABSTRACT

This scientific study investigates a paradigm shift and the real balance effects of an emergent, theoretically sensitive framework addressing two facets of intelligence, g (as delineated by Spearman) and IQ. It explores whether or not a sensory, attractive, holistic, nature-ecological (eco) intelligence (SANE) reduces impurities in general intelligence, both g and IQ. Qualitative data are guided by grounded theory, focused upon SANE, and combined with nameless attractive intelligence psychological education (NNIAL). Data were collected from g and organic Natural Attraction Ecology literature through ecopsych.com and ecopsychology field observations. Conclusions are (a) that NNIAL is supported through Natural Attraction Ecology health, (b) that SANE emerged as a green, ecological intelligence construct that reduced impurities within g, and (c) that by removing a pervasive prejudice against nature, we can rethink what defines intelligence. The main research implication of these findings is their expansive contribution to our knowledge of what it means to be intelligent. A paradigm shift becomes apparent, requiring further research.

DEDICATION

This work is dedicated to the memory of my mother Helga, who said you can lose everything you own, but no one can take away your education. This work is also in memory of my oma Karoline and oma Maria, who were two strong, independent women of our global community. Karoline, a heroine of justice, of Germany fought against the Nazis and Russians during World II. Maria with her Jewish husband and family, escaped from Austria and Slovakia, standing against the discriminating persecutions of her time

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My deepest of gratitude is sent to the place that beckoned me outdoors through nameless attractive intelligence psychological education (NNIAL). I give gratitude and thanks to the giant maple tree that sheltered me from the elements as I wrote and edited each word. I give my thanks to the various species of birds that sang inspiration to me. I say thank you to the squirrels that played in every tree that surrounded me with the webstrings of love and intellect. When stressful moments came, each squirrel made quite a fuss as it tossed huge pine cones and twigs to the ground for hours. Thank you to the ladybugs that liked to sunbathe on my mouse. They reminded me of my own NNIAL growth over the last 3 years of this journey. And most of all, I want to say thank you to sensory, attractive, holistic, nature-ecological intelligence (SANE) and to nature for gifting me with the experience to write every word outdoors in your NNIAL arms. I send an enormously special and heartfelt thanks to Dr. Michael J. Cohen for his support, guidance, and patience as I learned and grew through NNIAL and natural systems thinking processes (NSTP). You are a unique mentor of all humankind. I also thank Dr. Douglass Capogrossi, President of Akamai University, for always being available and giving me words of wisdom and courage. I give thanks to the students, parents, teachers, and director of Clark Fork School in Missoula, Montana (USA). I give loving thanks to my husband and best friend,

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PREFACE

I'm from the Valley of the Bitterroot

In the shadow of the mighty mountain

The blooming of the Bitterroot

Makes my heart feel so good

The wind plays a tune with the needles of a pine tree

Making a symphony for me

I sense a deer or maybe a few

I know they hear me too

A wind song is playing in the forest now

Wind violins strumming many a bough

I'll sit and listen until the sun sleeps

My dreams will be of the Bitterroot

(written by an eight-year-old female participant in this study)

RESEARCHER'S OBSERVATIONS

Does the maple tree concern itself with whether it is smart? Does the maple tree fear its own roots? Is the maple tree prejudiced against nature and itself? Natural attractions and natural attractive processes support the maple tree without labels or information errors. It is attracted to trust. It is attracted to being well. It is attracted to its roots. It is attracted to its nature "smarts." The maple tree survives on intelligent attractions that breathe life into its existence. The maple tree, without effort, moves continuously towards sensory attraction nature ecological (eco) intelligence. The maple tree adapts to its environment. It understands the completeness of the flow of its natural attractions. Do humans follow this natural pattern of natural attractions to healthiness and intelligent living?

We often see the suffering of so many. We see dysfunctional policies within our country and others. All too often, it is remarkable to see how a modernized, technologically forward global community is hurting the essence of what defines us, sustainability, and nature. We have societies that appear to focus upon individual, rather than the natural functioning of all the biomes. We see violence, crimes, devastating poverty, pollution, and growing addictions and we witness painful scenarios everywhere we look in the media and around us. Attempts are made to understand this confusion by labeling and classifying our world into an organized, unnatural framework.

This unnatural framework begins to take on a life of its own. It produces people who are emotionally and intellectually numb. These people are unable to cope with the pain and disconnection that sets in. This disconnection leads to the creation of artificial definitions of intelligence that develop from living with what Cohen (2011) calls *prejudice against nature* (PAN). How many of us see ourselves as being smart enough? How adaptable do we feel within our unnatural environments? How adaptable do we feel within our natural environments?

Within these prejudiced-against-nature communities (Cohen, 2011) are frameworks built upon disconnected, fragmented information. In turn, these frameworks grow into disconnected societies with repeating patterns of unnatural ways of going about living. Within such societies, people begin to be pulled back from nature and natural attraction connections.

Disconnected people begin to judge and label human beings according to how they perceive them, in a fragmented way. Accolades and awards are given to those who succeed in the unnatural environments. Recognition is afforded to those who have developed conditionings that enable them to elevate their status within these disconnected environments.

It is believed our lives decline as we move farther and farther away from a natural outside perspective to an inside view. An invisible essence grows within us. The invisible essence unwittingly injures our personal, intellectual, social, and environmental well-being. We develop an internal PAN (Cohen, 2011). We lose our abilities to function and adapt intelligently.

It would seem to make good common sense to reach outside ourselves. Research indicates

that when we explore the natural environment, we become healthier and smarter about our life choices. Reaching outside ourselves and connecting with nature enlivens our 53 natural senses (Cohen, Appendix D). We awaken an intelligence within us that is buried at an unconscious ancestral level and that motivates us to the most natural, fully functioning "well-being-ness." Sweeney (2009) in her nature–activity book titled *Owl Winks and Forest Songs*, wrote about Cohen's 53 natural senses and finding wellness through nature's wisdom. Our bodies and minds return to a wholeness that existed before the outside was shut out. Dormant intelligence awakens that has existed within us since birth.

Knowing ecological intelligence and our relationship to the earth establishes a necessary and intelligent nature connection. This necessary and intelligent nature connection is a key to healthy people and a healthy earth. Healthy people will forge an intelligent natural relationship to natural spaces and the real source of intelligence. A healthy earth translates to survival and sustainability for everyone.

CHAPTER ONE: THE STUDY

Introduction

Contemporary thinkers have sought to answer fundamental questions about intelligence: (a) Who is intelligent (Sternberg, 2000); (b) what does it mean to be intelligent (Richardson, 1999); and (c) why does it matter if we know who is intelligent (Sternberg, Lautrey. & Lubart, 2004)? According to David W. Orr (2004, p. 48), "No other society, to my knowledge, has made a fetish of intelligence as modern America. Indeed we have what philosopher Mary Midgley calls a veritable 'cult' of intelligence" administered by tribes of experts whose function is to measure it, raise it, write books about it and make those without it feel bad. But exactly what is intelligence?"

This leads us to ask the questions of what we are really testing for in schools and work places. How can someone find success in school and flunk out of life? How can someone achieve highly in business or work and drop out of high school? Are we really measuring intelligence or merely examining cleverness? Are we grasping at characteristics of some inadequate construct that disguises itself as intelligence?

In the academic world, for centuries there have been many failed attempts to capture the definition of intelligence (Sternberg, 2000). For the last century or so, many more modern attempts have been made to discover the subsets of intelligence factors and the elusive general factor of intelligence (Sternberg,2004). Researchers and test creators have been on this quest

trying to establish variables of intelligence or intelligences that apply to all individuals. Researchers are still left perplexed.

Orr (2004, p. 51) asked, "Could it be that integrity, stability and beauty of nature is the wellspring of human intelligence? Could it be that the conquest of nature, however clever, is in fact, a war against the source of mind? Could it be that the systematic homogenization of nature inherent in contemporary technology and economics is undermining human intelligence?" Furthermore, he stated, "The issue is not so much about what biodiversity can do for us as resources as it is about the survival of human intelligence cut off from its source" (p. 52). Both Orr (2004) and Cohen (2011) discussed a prejudice against biodiversity and nature. The point is that defining intelligence the right way is a matter of human survival. Intelligently nature-connected individuals would not destroy the very place or thing from which real intelligence originates and unfolds—the earth itself. Would intelligently connected peoples exhaust all their resources in clever ways until their species becomes extinct? If the answer to this question is no, then who is intelligent?

Maybe as we race towards an evolving, technology-based civilization we could even speculate that computer literate and technologically savvy minds fit the definition of a new kind of intelligence. If so, these types of technologically savvy individuals within a population sample represent what may be defined as meeting the future understanding of who is intelligent.

However, it seems as technology advances our lives into a cleverness that is beyond the understanding of most people, poverty, disease, crime, addictions, societal discord, and the destruction of nature are all soaring proportionally, along with and equal to the technological gains. Our growing disconnection from our evolutionary roots and nature is pushing us further

from the source of real intelligence. Orr (2004, p. 52) suggested that "we question the standard model of pre ecological intelligence." Cohen (2011) added that "like all of nature, humanity is the flow of natural attraction attractively manifesting itself as us" (www. http://ecopsych.com).

Cohen (2011) has spent 50 years researching an ecological intelligence that keeps the individual connected to the real source of real intelligence. Through his explorations of ecological intelligence, identified as *nameless intelligent attractive love* (NNIAL), Cohen studied a construct of ecological intelligence that might be the answer. However, how does Cohen's work address general intelligence?

Think of the intelligence and environmental theories in the early to mid-20th century insisting that all babies were born as *table rasas* or blank slates. These theories have since been proven wrong. Eaglemann (2011), a neuroscientist, noted the following:

> Babies at birth are not blank slates. Instead they inherit a great deal of problem-solving equipment and arrive at many problems with solutions at hand….Babies, helpless as they are, pop into the world with neural programs specialized for reasoning about objects, physical causality, numbers, the biological world, the beliefs and motivations of other individuals and social interactions. For example, a newborn's brain expects faces: even when they are less than ten minutes old, babies will turn toward face-like patterns….Take babbling. Deaf children babble in the same way that hearing children do, and children in different countries sound similar, even though they are exposed to radically different languages. (p. 84)

Keeping in mind, that we are not blank slates, then maybe we can conclude that like babbling, there is a preprogrammed, general ecological intelligence trait waiting to be discovered within the origins of nature of the individual. Cohen (2011), in his life studies, put forth the same premise, that nature is natural attractively flowing through the originating source of a nature ancestral process of intelligence.

In fact, Joseph P. Farrell (2011) commented that "science is just discovering that we have sensory abilities that cannot be explained or measured by the current level of technology" (p. 185). An example used by Farrell (2011) is the tsunami tragedy that devastated Southeast Asia in 2004. A herd of elephants showed sensory, ecological, and collective intelligence prior to the tsunami. This herd of working elephants, which had been shackled near to the sea, "acted in unison" and "began breaking free from their shackles" (p. 185). Their human handlers could not explain their insistent move to higher ground.

Elephants are equipped with "special bones in their feet that enable them to sense seismic vibrations" (Farrell, 2011, p. 185). These huge creatures felt something through their sensory, ecological intelligence and responded to it. They saved their lives from the dangers of the tsunami waves that annihilated so much human life.

Like the sensory ecological intelligence in elephants, the ecological intelligence within NNIAL appears to address this preprogrammed and evolutionary general intelligence trait. When participants in Cohen's studies and activities came to understand ecological intelligence within NNIAL, an identifiable, measurable change began to occur within them (ecopsych.com;

see Appendices I, J). The participants became more intelligent about the ways they coped and adapted within their various daily environments. Coworkers, friends, and families began to see a previously latent general intelligence present itself within the participants that had not been there prior to NNIAL.

This tells us that there is more to the general intelligence story. It tells us that through exploring the ecological (eco) intelligence in NNIAL, we free our minds to accept the billions of bits of sensory input awaiting our nature (eco) intelligence intertwined within our DNA. According to Cohen's concept of NNIA, intelligence is about knowing the how, not knowing all the whys. It is about knowing how to connect to our sensory ecological intelligence and tap into the sources of mind and nature.

Problem Statement

Problem Statement, Part 1

Problem statement Part 1 looks at the issues of defining and understanding intelligence. Everyone perceives or uses the term *intelligence* in a different manner. Whether we are studying the amebic protozoa or the human species, the question of what defines intelligence and how it should or could be measured has generated much debates. Definitions of the term *intelligence* are abundant (Brody, 1992; Brown & Compione, 1986; Carroll, 1986; Gardner, 1986; Jensen 1986; Scarrs, 1989; Sternberg, 1982b, 2004; Sternberg & Detterman, 1986).

Theorists continue to investigative the various components of intelligence in efforts to determine some unseen, underlying global construct of intelligence that can be generalized to the

human population. Theorists tend to focus on the generalizing of intelligence without truly identifying how their theories actually measures aspects of intelligence (Sternberg, 1987b). No one really knows if his or her theory is measuring "true" intelligence, whatever that may be.

Furthermore, this definition process has been difficult and riddled with problematic conclusions. The end result of all these efforts has been that measures of intelligence have been developed incorporating problematic and disconnectedly built paradigms of intelligence. Consequently, intelligence measures proclaim to measure intelligence, with no clear idea of what intelligence is. Intelligence theorists cannot be sure if they are actually scoring anything remotely related to intelligence.

IQ.

In defining and measuring intelligence, two important aspects have come to the fore: IQ and the g factor (Jensen, 1998). Often people hear the word *IQ* in reference to how smart someone may or may not be. What is IQ? IQ (intelligence quotient) refers to the score that an individual attains on an intelligence test. Yet, all do not agree that IQ is the only aspect of intelligence. Thus, Gardner (2004) wrote that "the creation of the intelligence test has been viewed, alternately, as one of the greatest success stories of psychology and as one of the most shameful episodes" (p. 30).

General Intelligence.

Grady M. Towers (1988), in his paper titled "Intelligence and g," wrote that "no anthropologist has asserted that IQ tests measure intelligence" (p. 42). He wrote that at best IQ tests measure only a small part of intelligence. The anthropologist thinks of intelligence as one's global capacity to adapt to one's environment and to exploit it to one's and one's group's advantage. Towers moreover, discussed the fallacy of the undistributed middle as it applies to defining intelligence. These situations occur when something is given entirely different meanings based upon erroneous meanings. We understand in these situations that the use of disconnected information creates disconnected and non sequitur conclusions. Two examples of invalid syllogisms follow:

Example 1.

All industrialists wear brown shoes. Dr. M. Cohen wears brown shoes. Therefore, Dr. M. Cohen is an industrialist.

Example 2.

No horse has two tails. Every horse has more than one tail. Therefore, every horse has three tails.

The point is that wrongful assumptions associated with disconnected information create wrongful conclusions. Disconnected versions of defining intelligence have led us to wrongful conclusions.

If we examine the surface characteristics of a great variety of intelligence tests in connection with their g loadings—the degree to which a test measures general intelligence rather than a specific skill or ability—we may arrive at some descriptive generalizations about the common surface features characterizing tests that have relatively high g loadings, as compared with tests with low g loadings. In addition, we may find a factor here or there that speaks to what intelligence is, but not the whole picture of intelligence. The problem still remains that the factor or factors do not offer a clear definition of intelligence, nor is it an intelligence that can be applied generally to the human species.

We do have much more test material to examine for the purpose of extracting intelligence factors than was available to Spearman more than almost a century ago. This permits broader generalizations about g than Spearman could safely draw. For example in 1927, Spearman's conceptualizations were narrow characterizations suggesting that most g-loaded tests were essentially those requiring the subject to grasp relationships, the education of relations and correlates.

The g factor, or general intelligence, is manifested in tests to the degree that they involve mental manipulation of the input elements, fundaments in Spearman's (1927) terminology: choice, decision, and invention in contrast to reproduction; reproduction in contrast to selection; meaningful memory in contrast to rote memory; and long-term memory in contrast to short-term memory. In these tests it is important to distinguish relevant information from irrelevant information in solving complex problems. Although neither the forward nor backward digit-

span test of Wechsler Intelligence Scale, for example, has much g loading, the slightly greater mental manipulation required by backward than by forward recall of the digits more than doubles the g variance in backward as compared with forward digit span (Jensen & Figueroa, 1975).

We have seen many examples in which a slight increase in task complexity is accompanied by an increase in the g loading of the task. This is true even for the most mundane and seemingly nonintellectual, common sense level involving some kind of conscious mental effort, which can be substantially g loaded. Intelligence testing has failed to provide unbiased and eidetic individual assessments that offer any predictive values of future school or life successes.

An analogy (Berry, 1993; Greenfield, 1997) may be helpful at this point. Scientifically, we all know that humans have blood circulating through their bodies. Blood is common to all humans. The fluid identified as blood is analogous to the g factor in humans. However, all blood is not the same, and consequently there are different types of blood with varying structural components. Intelligence may be thought of through this analogy: the defining "fluid" identified as intelligence, has eluded researchers. If this defining fluid, g, of general intelligence has eluded researchers, the questions that need to be considered are (a) Can we identify an actual ecological, preprogrammed construct of g that can be accepted as intelligence, in other words, does this construct exist; and (b) is it important or even significant to prove that this construct might exist, and if so, for what purpose?

Despite a century of often baffling, controversial debates of exactly what we are testing when we are measuring intelligence, a true generalized factor of intelligence has never been extrapolated or empirically proven without a doubt. The lack of proof compounded with the numerous theories has resulted in a movement towards the invalidation of intelligence testing (Achenbach, 1970; Bagnato & Neisworth, 1994; Cantor, 1997; Daniel, 1997; Gauthier, 1993; Kaminer & Vig, 1995; Kaplan & Saccuzzo, 1993; Naglieri & Reardon, 1993; Paulhus et al., 1998; Seligman, 1994; Sternberg, 1979, 1991, 1992, 1995a, 1995b, 1995c, 2004; Thorndike, 1991; Wiggins, 1990; Williams & Wilkins, 1995).

Defining Intelligence

An attempt at defining intelligence was made in 1905, when Binet presented a value for intelligence, a general construct of ability known as the term *IQ*, which is commonly used both in academic and in lay circles. IQ appears to have grown in perceived meaning and breadth. It seems that the IQ value has developed an ambiguous identity, depending upon the intended usage, and may even be confused with g. The American media have questioned "IQ's utility and validity" (Seligman, 1994, p. 38; Loehlin, 1997).

One can notice a trend, when reading the literature, that illustrates a misuse of the term *IQ*. The misuse of IQ has resulted in heterogeneous meanings across all scholarly domains. As an added measure of confusion and contradiction, the literature talks about rising IQ scores (Detterman & Sternberg, 1982; Flynn, 1999; Gould, 1996; Hernstein & Murray, 1994; Jensen, 1969; Mahlberg, 1997; Page, 1986; Perkins & Grotzer, 1997; Reis & Renzulli, 1992; Sternberg,

1979b, 1995a). It is believed that if IQ scores are actually measuring a fluid intelligence factor, then IQ scores should not be rising.

The fact that IQ scores are rising, referred frequently to as the Flynn Effect (Flynn, 1999), perhaps suggests that the measurement material on intelligence test is outdated, no longer an indicator of what may now be considered criteria for intelligence, or is not measuring any defining value related to intelligence but rather abilities or something else. And if we are not measuring intelligence, what are we measuring? Could it be we are measuring cultural changes and academically acquired knowledge with built-in prejudices?

A definition of fluid intelligence is nonexistent. Each theorist, from the perspective of his or her theory, contributes understanding to some aspect of the essence of general intelligence, but no one theorist has the definitive solution. In the meantime, the issue has been debated widely (Ferrari & Sternberg, 1995; Gould, 1981; Sternberg, 1987; Suzuki & Valencia, 1997; Weyher, 1988; Williams & Ceci, 1997) regarding intelligence testing, suggesting inherent flaws within the essence of the existing paradigms of intelligence.

Public outcries that intelligence testing has been driven by political and social agendas has resulted in the banning or cautionary uses of these types of assessments. Particularly in the 1970s, intelligence tests were viewed as biased criteria that are used to maintain social inequities. A recurrent theme began to develop that intelligence tests are not really measures of intelligence. In the *Mismeasure of Man* (Gould, 1996), the author expressly indicated that IQ tests are culturally biased and argued that IQ self-serves the political and social ruling elite.

Consequently, concerns mounted regarding the use of intelligence tests (Binet, 1905; Esters et al., 1997; Eyesenk, 1966, 1979; Gauthier, 1993; Gould, 1996; Linn, 1986; Naglieri, 1998; Sternberg, 1982a; Sternberg, 1984) for screening individuals and labeling students in an educational setting. Parents wanting the best education for their children saw intelligence testing as creating a two-tiered schooling system, the haves and the have-nots. The have-nots appeared to be those students who came from impoverished or ethnic backgrounds.

In the minds of the parents, the school administrators became the gate keepers of their children's future and potential successes.

Intelligence testing was also counterproductive to the social movements of shaping a more egalitarian society with equal access to all levels of education for all individuals (Gould, 1981; 1996). A good example today of this particular intelligence controversy is demonstrated as follows. Intelligence tests scores often become the benchmark for admission to particular postsecondary programs. If a student has excelling academic credentials, but his or her intelligence test scores have missed the institution's specific entrance requirement scores, even by one point, then the student would not be admitted. This practice is still carried on with the Graduate Entrance Requirement Examination (Sternberg, 1987). Academic abilities, natural intelligence, coping and/or adaptability skills, and teacher-related judgments do not enter the graduate requirements entrance equation. Intelligence tests and GRE scores do. These scores may reflect an over- or understatement of one's abilities and are dependent upon a number of unknown variables that occurred during the testing day (Goleman, 1994).

Intelligence Indicators

Another way to think of indicators of intelligence is to think of human tears. Tears are usually associated with sadness and are one indicator that an individual might be sad. However, tears may also be an expression of joy, a deep emotional response or a physiological response to something in one's eye. And one may be sad without crying.

The tears analogy mimics the problems of intelligence tests. The results from intelligence tests demonstrate that scores are only one indicator of what may constitute potentially some identifiable construct of intellectual ability within an individual. Some intelligence theorists would debate that these indicators are measuring defacto abilities of intelligence, but not the definitive construct of general intelligence. Because intelligence can neither be created nor destroyed, some unknown factor is functioning to motivate change in how an individual responds to his or her environment internally and externally. Logically, the next step is to investigate the problem of defining intelligence.

From a societal viewpoint, understanding intelligence has major significance. People and psychologists alike want to know what will predict success later in life. Sternberg (1999) stated that "we know that intelligence tests predict only about 10% of the variation in real life success, but what's the other 90%?" (p. 30).

Problem Statement, Part 2

Problem statement Part 2 discusses sensory attractive nature ecological (eco) intelligence. The following framework discusses our sensory attractive nature ecological (eco) intelligence and its connection to nature's preprogrammed general intelligence. Because of our prejudice against nature (Cohen, 2011) and our disconnection from nature and NNIAL (Cohen, 2011), a growing knowledge gap is threatening the link to ecological smartness, which defines everything without discrimination, attributes, or bias.

Known physics and neuroscience domains point us to billions of sensory inputs that go unprocessed every day, because we are disconnected from these sensory inputs or biologically incapable of processing them. Our indoor lives have isolated us and insulated our minds from our access to a sensory ecological intelligence.

Imagine an individual exercising his or her mind through ecological intelligence in NNIAL to the extent that the mind and body are able to reach their utmost intelligence and healthiness. Being able to accomplish this self-actualized well-being requires intelligent behaviors and nature-oriented actions (see Appendix E) for the individual.

The newly awakened sensory inputs build an established "smarts bank" for solving daily problems. This smarts bank, therefore, identifies a measurable and nondiscriminating general ecological (eco) intelligence that meets the burden of a universal construct. And where does this general ecological (eco) intelligence come from? The primary sources are nature and the earth.

Nature is everywhere. It is above our heads and below our feet. It thrives in the invisible pull of gravity and the webstrings of life that connect us all. Nature is the innate, preprogrammed ecological (eco) intelligent disposition that lives within all individuals. Nature and our inherited and preprogrammed general ecological (eco) intelligence is what we leave behind when we head indoors. Nature is understandable and sensible in any language and culture.

What do we see in our homes or workplaces? We see a plugged-in global community that may be robbing us of our last chance to truly understand intelligence and to be intelligent. We are plugged in to our electronics, watching TV or surfing the web, shutting out nature and our sanity. Our circadian rhythms are confused by the pseudo-light from our arsenal of electronics. Our community is a sleep deprived, electronically polluted world in constant flux and motion. Our children are frequently babysat by television programs and raised by appliances (Clements, 2004, p.74). The television programs attempt to make unnatural connections that are not part of our brain's inherited ecological networking. Our ancestral genetic coding for general ecological (eco) intelligence remains unstimulated in these human-made environments. Our children remain disconnected from ecological intelligence, prejudiced against nature, and deprived of feeling connections to the earth.

In a recent study, Jeanine Sandra described (as cited in Garella, 2010, p. ii) "how geographilia, or a love for the Earth, unfolds in children" when children are permitted to explore and play outdoors. Children who play more outdoors have opportunities to build a histories of

their natural world as well as bonds between themselves and the earth.

Garella further added that lessons learned in the natural world "not only help children reach developmental milestones; they also play an important role in the formation of beliefs and attitudes used in decision making processes later in life" (p.ii). Garella also wrote that "children's actual experience with this natural space over time links them to one another, place, nature and the Earth" (p.ii). They develop an ecological intelligence developed in these children that affected how they felt about the earth and fostered physical, emotional, social and spiritual growth within them.

Intelligence and Ecological Intelligence Debates

If we think of the intelligence debate in a simpler, less abstract form, we can imagine an upside-down ice cream cone with four swirls of different flavors that form concentric circles within the cone. The first circle, the core, represents the proponents that study internal and nondiscriminate nonprejudiced-against-nature concepts connected to structure, process, nature, development, culture, particles of synchronizing energy, webstring connections, human-defining building blocks, ylems, and other potentially yet-to-be-discovered variables. The internal aspects include information from theorists who study the biological functioning and cognitive processes of the brain. Theorists such as Cohen (2011), Das (1995), Jensen (1969), Gardner (2004), Piaget (1972), Spearman (1927), and Sternberg (2004), would fit this paradigm. These theorists view the internal elements as part of their theories. Their theories move from the inside out, with the flow of cognitive information being derived from the internal world of the individual to the

external world, with the exception of Cohen's theory. Cohen's theory (2011) moves from the internal world to the external world, as well as from the external world and its relationship to the internal world.

The next circle or flavor swirl identifies permutations of internal and external viewpoints of intelligence and nature itself. This circle incorporates a mélange of the first and third circles, for example, as hypothesized by Sternberg (1985) in his triarchic theory. In this part of the intelligence cone, blending of concepts occurs and theoretical aspects become less distinctive because internal and external cognitive processing are combined. Sternberg endeavored to incorporate both the internal and external worlds with his postulation of three subtheories of analytical, practical, and creative smarts. It was Sternberg's effort to stretch the limits of intelligence in order to provide a theory that is all inclusive rather than exclusive. Cohen's all-inclusive natural web of life ecological (eco) intelligence (2011) within NNIAL presents a ubiquitous intelligence found everywhere, including preprogrammed intelligence in DNA.

The third circle, moving outwards from the core, reflects the ideas of theorists who focus on external factors such as those defined within the parts of structure, process, nature, development, webstring connections, human-defining building blocks, ylems, and other as-yet-unknown variables. The third circle encompasses such theorists as Cohen (2011), Feuerstein (1980), Smirvov (1994), Sternberg (2004), and Vygotsky (1978). External world components are seen as belonging to a primary process that forms intelligence and adaptive behaviors. Vygotsky would argue that intelligence processes are internalized from the external environment, and

therefore developmental and processing stages move from the outside to the inside. Cohen's ecological (eco) intelligence within NNIAL demonstrates a primordial nature process that forms a whole mind–body intelligence and natural adaptive change.

The fourth circle illustrates intelligence as an issue between subjects. Essentially theorists need only to posit that individual differences are the key issues. The psychometric theorists tend to emphasize individuality through factor analysis. If a theorist takes this perspective, then it becomes a complicated task to control for all known and unknown variables under the umbrella construct of an individual-differences intelligence.

The final circle is the cone. The cone is called the *main effect*. This main effect is the hypothesis that there exists an underlying construct of intelligence that keeps all these circles together. The fact that this hypothesis has neither been proven nor disproved nor considered a relevant or nonrelevant investigative issue does not indicate a reasonable basis for dismissal. Main-effect theorists try to resolve this conflict by accounting for variance through interactional relationships as effects of the main effect. Because of this lack of a cohesive, nonconflicting theory and the conundrums intelligence researchers (Gardner, 2004) find themselves in regarding what defines intelligence, a new approach is needed to redefine the question of what it means to be intelligent.

Ecological (eco) intelligence within NNIAL proposes to be the missing link. This missing link is what truly identifies an ancestral-based and ecological preprogrammed intelligence within all of us that surpasses all cultures and makes one human connection. Through anthropic

reasoning, one can hypothesize that through connecting to these nature smarts or ecological (eco) intelligence, researchers can better appreciate a defined, nondiscriminate and generalized ecological (eco) intelligence residing in all individuals as part of our biological heritage. As part of our ice cream cone construct, the natural smarts known as ecological (eco) intelligence within NNIAL assumes the role as the main effect.

As one moves down the cone, away from the tip, one can slice through the cone making cross sections at any point selected arbitrarily, and examine various abilities or intelligences at different hierarchical levels. The widest part of the cone has the most number of abilities, intelligences, and nature–sensory connections. Using this ice-cream-cone model, one can see theorists using a protocol of inclusivity that reflects intelligence as having meta levels and multiple levels of sensory information processing that are genetically imprinted into our brains.

Evidently, as the ice cream melts within the cone, we have a blending of theoretical aspects and very few clear and separate flavors. What we have left is an attractive cohesiveness and general, ecological (eco) intelligence.

As already identified, ecological (eco) intelligence within NNIAL is born within each of us through our genetic inheritance, ancestral memory cells, and the creation of each human from the beginning of time. Although, there may be many ambiguous areas as a result of the blending of theoretical boundaries, all circles contribute to create the ice cream cone that becomes the main effect within general intelligence.

Histories of intelligence research attest to the fact that when the intelligence problem is defined the wrong way, through disconnected information, researchers can see only a mess, that is, ice cream flavors melted together with no specific understanding of what researchers are actually seeing. This is still the problem challenging intelligence theorists today.

With the mess gone, we are able to gain insight and understanding through reaching back before the big bang theory to our original creation. We begin to recognize a measureable and nondiscriminating ecological (eco) intelligent factor within each of us. This is an ecological (eco) intelligence that exists naturally, not a human-made, school-house-produced, prejudiced-against-nature intelligence.

In order to reawaken our webstrings of ecological (eco) intelligent origins, we need to move towards this natural intelligence. Reawakening our webstrings of ecological (eco) intelligence occurs by reeducating our old ways, tossing out life-draining conditioning, returning to our preprogrammed ecological (eco) intelligent birth state, and connecting directly with the natural world. The stimulating of the DNA-based ecological (eco) intelligence from the unconscious levels to the forefront of conscious activity refers to developing attractive intelligent sensory awareness. As we reconnect with nature and our natural selves, our minds expand to reconnect intelligently with our 53 senses (Cohen, 2011; see Appendix D). Our minds become attracted to more intelligent connections and previously unprocessed sensory inputs (see Appendices G, H, I). Ecological (eco) intelligence within NNIAL moves us along to nurture *sensory attractive*

nature ecological (eco) intelligence (SANE). SANE intensifies NNIAL by expanding the ecological availability of general natural intelligence abilities. Sensory attractive nature ecological (eco) intelligence covers more intelligence theoretical ground, and in this study, investigates any shifts within g and IQ.

Rationale for Literature Review Design

The literature review in this study provides sufficient scope through the examination of the fields of intelligence, education, geography, neuroscience, psychology, and biology. Collier Butler Kaler (2011) commented that the review of the appropriate literature is an important fundamental activity that guides research methodology. Boote and Beile (2005) recognized the goal of a literature review is to advance our collective understanding of the topic by having an understanding of the types of research that have been conducted previously and "to know the strength and weaknesses of existing studies" (p. 3).

The comprehensive literature review conducted of the intelligence, education, geography, neuroscience, psychology, and biology fields is the key to understanding this study's contribution to its relevant scholarly fields. The task of gathering the data and wide ranges of theoretical models justifies the inclusion and exclusion of pertinent literature (Boote & Biele, 2005) within the parameters of this paper. This type of expansive literature–review design adds qualification to the theoretical findings and serves to support study findings.

Grounded Theory

According to Collier Butler Kaler (2011), Glaser and Strauss (1967), who founded the grounded theory method, wrote that literature can be reviewed to provide the researcher with a framework to guide the study, but he strongly recommended doing the literature review *after* the theoretical concepts were formulated.

Mavetera and Kroeze (2009) described Glaser's unique approach to this literature review design:

> In using Grounded Theory Method, the intention is to *discover* and not to test or duplicate concepts and hypotheses….This, Glaser warns, could introduce researcher bias by giving rise to a set of preconceived concepts, categories and properties from other researchers' work. Starting with a literature study will constrain the free discovery of theory and, hence, will defeat the main dictum of grounded theory approach. (p.8-9)

Over the 3 years of this study, the researcher investigated the literature as the material became relevant (Dick, 2005). The literature review showed gaps of knowledge, which then became the basis for this qualitative study (May, 1986).

Purpose of the Study

The purpose of this grounded theory study was to reveal a more inclusive paradigm of how we understand intelligence and ecological intelligence.

Central Qualitative Hypothesis

Because the literature review provided for a qualitative paradigm through intensive research, an a posteriori theory framework emerged as part of the exploratory nature of this study design. The study research design addressed the central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ.

Definitions of Terms

Now Nameless Intelligent Attractive Love (NNIAL)

Now nameless intelligent attractive love (NNIAL; Cohen, 2011) is knowledge through natural activities (see Appendices F, G) that bring about general truths. Cohen referred to these general truths as *green/green statements* (see Appendix G) relevant to us. Ecological (eco) intelligence within NNIAL is a paradigm that Cohen has understood for as long as he can remember. His studies to date seem to prove NNIAL brings a healthiness and intelligence to all peoples (see Appendices I, J). NNIAL is revealed as an unlimited resource that enhances our cognitive abilities. The word *science* is derived from the Latin *scientia*, meaning knowledge, and NNIAL is a science or way of knowing unto itself.

When Cohen was asked to define NNIAL, he offered the following response:

> Thinking by using the NNIAL acronym brings my whole history with nature and humanity to Mind: The first ‘N’ reminds me of "Now," that nature's upwelling attraction energy and its beauty only exists and operates in the immediate moment, the "Now" of life. The next

moment, the attraction relationships are different; they have changed and grown into additional attractions.

Since we are part of nature's flow of attraction power, the “Now” includes our stories about the past and future. We can only change them in the “Now” if it makes sense to do so. The stories, however, are not nature. Nature consists of a flowing river of self-correcting attractions that produce life-supportive, balanced relationships. These acts are not stories, they are mutually supportive, Now, attachment relationships.

The second ‘N’ reminds me that nature is "Non-literate" and "Nameless." It does not know itself, communicate or organize itself with words and stories, as does humanity. It organizes and operates via natural attractions that, in the Now, are consciously seeking fulfillment and attractively finding satisfaction by creating additional attractive relationships and attachments.

The ‘I’ in NNIAL reminds me that nature is "Intelligent," that its wisdom enables it to wordlessly create balanced attractive optimums of life, cooperation and diversity without producing any garbage. "I" reminds me that, intelligently, nature seldom displays or causes the abusiveness, disorders or isolation that we suffer. The latter are not attractive. They are mostly the effects of Industrial Society's nature-disconnected and conquering stories about the natural world.

The fact that nature is able to peacefully actualize and sustain its’ attractive natural perfection on local and global levels demonstrates monumental intelligence.

The ‘A’ helps me sense that instead of using stories, from day one, nature continually has consciously grown and manifested itself through energetic natural Attractions and that they become pulsating attachment relationships and new Attractions. Moment by moment, the unpredictable life of nature's unfolding friendly "natural essence" is an upwelling, a flowing, bursting variable river of living strong and weak Attractions that balance out and manifest, themselves to be every aspect of the plant, animal and mineral web-of-life community and its energies, including us and our psyche.

Our desire to survive is the attractive beat and rhythm of aliveness, the natural Attraction consciousness in us to continue living as ourselves in support of nature's survival. This vital desire consists of a congress of 52 additional fluctuating natural sensory Attractions that seek equilibrium. One of them is our Attraction to be literate, the rest are felt senses and sensibility awakenings that beg us to become literate about them so we may more consciously think and feel with their supportive grace. "A" includes that Attraction is the self-conscious pulse of Authentic, Ancient, Alive, Awareness in Action from moment one throughout the eons.

The ‘L’ in NNIAL reminds me that what we experience as Love is the pulse of natural attraction in action. Our story world can attach our inherent natural Love to the attractive nature of the natural world, including ourselves and others, or we can attach and bond it to story-constructed technologies, blueprints and beliefs. Stories are usually disconnected from, and substitute for, our inborn attraction to nature and its lasting rewards because it is active

relationship building aliveness, not a story. Most of these disconnected stories produce destructive side effects. Detached from nature's life, these stories become a form of death. They do not contain the Intelligence of nature's attractive purifying and restorative ways. We have yet no story, or other substitute, for the global Earth wisdom of authentic nature. (Cohen, 2011)

Further insight and responses into NNIAL can be found at the following link: (http://www.ecopsych.com/ earthstories101.html).

Warber and Irvine (2008) quoted Somé, who drew from his indigenous African teachings to elaborate on the spirit of NNIAL without naming it as such:

> Our relationship to the natural world and its natural laws determine whether or not we are healed….Every tree, plant, hill, mountain, rock, and each thing that was here before us…has healing power whether we know it or not. So if something in us must change, spending time in nature provides a good beginning. This means that within nature, within the natural world, are all the materials and tenets needed for healing human beings. (p. 8)

And if nature can heal us (see Appendices F, G, H, I, J), then nature must be intelligent. If all materials and tenets are available to us within the context of the natural world, then intelligent nameless attractive intelligent love is accessible to every human being.

Sensory Attractive Nature Ecological (ECO) Intelligence (SANE)

Sensory attractive nature ecological (ECO) intelligence (SANE) is

- an attraction intelligence that lets us know where to direct our attention and pulls us from anywhere to an attractive part of nature;
- an ecological grounding;
- a universal knowledge of what is real and natural;
- a part of a concept that spans time from all beginnings to infinity;
- a global nature intelligence that survives cross cultural biases;
- an understandable and loving part of emotional intelligence;
- an embodiment of all 53 natural sensory intelligences;
- a construct that intensifies NNIAL (Now Nameless Intelligent Attractive Love);
- all natural connections and interconnections within a person to his or her own body, brain, emotions, 53 natural sensory intelligences, spirit, sense of place, the ground he or she lives on, the sky over his or her head, the nonhuman and human beings that live in his or her area, the global community and beyond;
- an ancient, natural wisdom processes rewired or re-awakened by letting the Earth teach us;
- an awakening of nature webstrings within ourselves;

- a nature-centered conscious and unconscious awareness;
- an ability to adapt within our natural environment through NNIAL growth;
- a true measurable and general nature intelligence;
- a nondiscriminatory factor of smarts;
- a measuring beyond IQ attributes and school-smart components;
- a nonprejudiced-against-nature construct;
- an ability to adapt within an environment;
- use of appropriate coping mechanisms and problem solving skills;
- increased levels of processing natural attractions and sensory inputs;
- a preprogrammed, collective intelligence; and
- a non-blank-slate approach to birth;

Sensory attractive nature ecological (eco) intelligence (SANE) is our genetic NNIAL inheritance and expresses a general intelligence.

Abstract

Abstract denotes the ability to shortcut, to draw away, to dissociate from, or represent.

Anthropology

Anthropology denotes the science of human beings, especially the study of human beings and their ancestors through time and space and in relation to physical character, environmental and social relations, and culture, theology dealing with the origin, nature, and destiny of human beings.

Biological

Biological denotes anything of or relating to biology or to life and living processes, used in or produced by applied biology, connected by direct genetic relationship rather than by adoption or marriage.

Biomes

Biomes denotes "the world's major communities, classified according to the predominant vegetation and characterized by adaptations of organisms to that particular environment" (Campbell, 1996). The importance of biomes cannot be overestimated. Biomes have changed and moved many times during the history of life on earth. More recently, human activities have drastically altered these communities. Thus, conservation and preservation of biomes should be a major concern to all. Biomes are grouped into six major types: freshwater, marine, desert, forest, grassland, and tundra.

Construct

Construct denotes something constructed by the mind, a theoretical entity.

Culture

Culture denotes humanity's abstract, literate, shortcut thinking process, its attitudes, stories, artifacts, and effects.

Daisy

DAISY denotes the process of developing attractive, intelligent sensory primordial matter and sensory input (ylems) in order to achieve natural attractive love and sensory attraction natural intelligence.

g

g denotes denotes the abbreviated form or *general intelligence* or Spearman's *g*.

Green/Green Statement

Green/green statement denotes universal general truths obtained through NNIAL and SANE.

Industrial Society

Industrial society denotes a culture that socializes itself to replace natural relationships with abstract stories that reward and idealize the power of human-created techniques and technologies.

Intelligence

Intelligence denotes the ability to learn, understand, to deal with new or trying situations. It also denotes the skilled use of reason, the ability to apply knowledge to manipulate one's environment or to think abstractly as measured by objective criteria (such as tests).

Natural Attractions

Natural attractions denotes, in nature and life, that which draws us together.

Nature

Nature denotes the nonliterate, unadulterated, biological sensitivity attraction process of the eons, a creative and controlling force in the universe. It also denotes an inner force or the sum of such forces in an individual: humankind's original or natural condition or a simplified mode of life resembling this condition.

Nature People

Nature people denotes citizens of cultures whose socialization focuses on thankfully obtaining gifts from the usual course of nature as its extended family.

Prejudice Against Nature (PAN)

Prejudice against nature (PAN) denotes the unseen essence of why we injure our personal, social, and environmental well being when we do not want to (Cohen, 2011).

Paradigm

Paradigm denotes a philosophical and theoretical framework of a scientific school or discipline within which theories, laws, and generalizations and the experiments performed in support of them are formulated; more broadly, it denotes philosophical or theoretical framework of any kind.

Prejudice

Prejudice denotes an unreasonable, prejudging attitude due to bonding, unusually resistant to rational influence.

Respect

Respect denotes an act of giving particular attention, consideration, high or special regard or esteem.

Self-Evidence

Self-evidence denotes a self-validation of what humanity registers senses or feels from experience.

Sensory

Sensory denotes phenomena relating to sensation or to the senses, sensory stimulation, conveying nerve impulses from the sense organs to the nerve centers, sensory input processed and unprocessed.

Sociological

Sociological denotes phenomena relating to sociology or to the methodological approach of sociology, oriented or directed toward social needs and problems.

Webstrings

Webstrings denotes attractions in nature whose flow holds the world together. At least 53 of them register in human consciousness as natural senses, sensations, and sensitivities.

Wranglers

Wranglers denotes mental conditioning that stops us from reaching our fullest potential, individuals or forces that prevent us and/or disconnect us from NNIAL.

Ylem

Ylem denotes matter that existed before chemical elements, according to the big bang theory. As described by Cohen (2011), ylem is evidently a primordial form of matter, before particles. Natural attraction is attracted to become matter (ylem), but also can remain as nonmatter that attracts matter into manifesting itself as particles, etc.

Delimitations of the Study

The scope of this study was limited to a small group of elementary school children in Grades 2 to 5, and includes the online adult feedback from ecopsych.com. The elementary school students were enrolled in a preschool-to-Grade-5-smaller-private-school environment in Missoula, Montana. The academic year began around September and ended by the second week of June. The online feedback at ecopsych.com from adult participants within Project NatureConnect is available year round, as well as participant feedback is posted year round.

Limitations of the Study

The limitations of this study include the following: (a) a small participant sample of elementary school age children, (b) a lack of gender information in both sample populations, (c) a reluctance of parents of the elementary school children to allow the researcher to keep copies of the children's journals, and (d) a reluctance of teachers and staff involved in the study although they had been introduced to the concept of ecological intelligence through Cohen's work.

Replication and Construct of Generalizability

Because this study was a qualitative study, no random samplings or deductive methodologies were conducted. This study could be easily replicated in other populations by using activities outlined in the appendices as well as by preparing in advance to code activities using grounded theory methods. As evident in Cohen's Project NatureConnect online globally based applied eco psychology courses, the replication of the nature activities are ongoing.

Because this study included both children and adults, this study has findings that can be consistently generalized to other populations with the ability to make predictions.

Significance of the Study

The significance of this study is that it is original research about a nature intelligence revealed in elementary-school-aged children learning through ecological (eco) intelligence within NNIAL (Cohen, 2011).

Summary of the Study

To date, no such research has identified ecological intelligence as general intelligence. The central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ has not been studied. There is a gap of knowledge within the current literature regarding ecological intelligence and ecological (eco) intelligence within NNIAL revealing any shifts correlating with g and IQ. Findings of this study can be used to redefine general intelligence and fill the existing research

CHAPTER TWO: REVIEW OF TRADITIONAL INTELLIGENCE

Overview

People have always been curious about how the human mind works and what makes people smart. Whether it is parents sizing up their children, teachers sizing up their students, hiring committees evaluating a prospective employee, or yourself simply choosing a group of friends, people compare themselves to others or are compared to others according to the rubric of intelligence. Hiring committees will decide about a candidate's intelligence and his or her suitability or fit within an organization. Parents will look for smartness in their child, and teachers will rate their students as bright or not (Richardson, 1999; see Appendix C). On a personal level, depending upon our choice of friends we may look for the "cool" or smart peer group.

Identifying who is smart is as important to parents as it is to schools, big businesses, and societies. The bright–dull dichotomy permeates all cultural boundaries and tribal societies because we want to know what makes people succeed or fail.

Success or failure in any task we do in our society is often intrinsically associated with intelligence. The lack of or the gift of intelligence may be seen by individuals as a causal dimension that may affect success or failure (Meyer & Koelbl, 1982). As a result of the need to know more about what makes some people perform better at school or in work, society has recognized that the nature of intelligence is an important issue for study. Therefore, two

important questions arise: (a) How do we formally test for intelligence and (b) does testing really serve any practical purpose?

The first argument of the intelligence debate suggests we are not really measuring intelligence in formal test situations. As part of this argument, we need to ask what we are really testing (Sternberg, 1984) and whether we need to look at intelligence testing in a different way. It is important to understand what we are assessing and what the assessment strategies and goals are (Esters & Ittenbach, 1999).

At one point, I translated and tested a pilot version of the experimental Sternberg Triarchic Abilities Test in 1995 with almost 200 Grade-4, -5, and -6 children. Sternberg was attempting to test intelligence beyond the school-smarts domain.

The second argument of the intelligence debate questions whether there is a practical use to the formal testing of intelligence. For example, in a school setting, research favors the accuracy of teachers' judgments of their students rather than the scores achieved by students on an intelligence test (Hoge & Coldarci, 1989). The importance of knowing what intelligence is and what teachers think cannot be emphasized enough. Mayer (2000) wrote that "the field of intelligence and education are so intimately bound together that it would be impossible to understand intelligence without knowing about its relation to education" (p. 519).

To understand the roots of intelligence and these arguments, the following outlines the history surrounding the evolution of intelligence research. The historical background is a dialogue of

necessity that will help the reader gain an understanding of the struggle to define intelligence, both past and present.

It is important to know some of the early history of how the study of the mind and human intelligence evolved, because the history appears to be inconsistent and difficult to follow. There are periods when the concept of intelligence and a reference to the term *intelligence* were much in evidence, followed by periods when academic literature has neglected intelligence. Reviewing a time span of 2,500 years, we can see philosophers wrote about the problem of knowing and knowledge (Gopnik, Meltzoff, Andrew, & Kuhl, 1999). All of the research from ancient philosophical foundations to contemporary psychology is a remarkable product of each era that sheds some light on the actual conceptualization and biological basis of human intelligence. The academic literature will illustrate the diverse theoretical models that have shaped the way we look at intelligence and the nature of traditional testing intelligence.

From the earliest writings, comparisons of people with animals or of people with people have been common. People wanted to believe that animals were inferior and humans superior. In this regard, humans have generally been anthropocentric (Russon & Bard, 1996). Russon and Bard (1996) remarked that interest in intelligence has always been intense. It verges on an obsession within western cultural and scientific traditions, where intelligence reigns as a central defining characteristic of the human species.

The study of the mind, unlike other scientific disciplines, has taken upon itself the task of studying all sorts of behaviors in human and nonhuman species, including what makes someone

or something intelligent. For example, we have moved from the evolution of psychological study of what constitutes the human soul and consciousness as a philosophical endeavor to the modern, scientific emphasis upon the identification and measurement of human intelligence.

This movement or progression toward a more scientific approach was propelled by three societal needs. The earliest and first need was to explain what distinguishes human beings from other animals. Simply put, what makes us different from other animal species? The second need was to understand individual differences, as Quintlan wrote in 70 AD:

> It is generally and rightly considered a virtue in a teacher to observe accurately the differences in ability among his pupils, and to discover the direction which the nature of each particularly inclines him. There is an incredible amount of variability in talent, and the forms of minds are no less varied than the forms of bodies. (Eysenck, 1979, p. 1)

The third need was to protect the wealth and status of those determined to be part of the cognitive and social elite. Centuries of arguments were spawned by the drive to meet all three needs.

One could even suppose that psychology, or the study of the mind and the measurement of its abilities has been around in some prehistoric form since at least the days of Australopithecus. Australopithecus, according to anthropologists, was the first upright ape-like man. This ape-man was followed by Homo habilis (the handyman), Homo erectus (the traveler), and Homo sapiens (the precursor of modern human species; Kolb & Whishaw, 1996). Each of these species

appeared to have structure within their societies. Basing one's conjectures upon the social structuring of ancient civilizations and tribal societies, one could hypothesize that there were designated leaders and that tasks were assigned to individuals using criteria such as who was bigger, stronger, smarter, and had more abilities. These selections would have promoted the survival of individuals. Hippocrates (circa 460 - 377 B.C.) was quoted as saying that "the majority naturally perished, having too weak a constitution" (Murphy, 1949, p.32).

From these early comparisons arose many ways of looking at intelligence. It has been difficult to ascertain what really defines intelligence. If we were to look at a linear scale of defining and rating intelligence from a beginning point that represents zero intelligence to another finite point that represents genius intelligence, we would find many ratings and a myriad of definitions. The definitional disparities are great and confusing.

One common theme running throughout all these definitions stands out: the ability of the individual to adapt to his or her environment. Charles Darwin (1959) proposed the same premise regarding adaptation. Darwin postulated that the survival of a species is based upon environmental adaptation, and therefore intelligence, is linked to adaptability. Using adaptability theories within intelligence, we might conclude intelligence is the general ability to adapt. This principle of adaptation as a factor within intelligence appears to be supported by many psychologists (Richardson, 1999). Perhaps this adaptability relates back to adaptations and adaptability within nature.

The next section elaborates at greater depth the search for an intelligence paradigm, by providing a historical view within the context of different models of intelligence.

History of Theoretical Framework: Models of Intelligence

Models of intelligence help to provide a historical account of the evolution of intelligence theories. Sternberg (2004) identified six models of intelligence: geographic, computational, anthropological, biological, sociological, and self-governmental. These models of intelligence offer further insight into the dilemmas facing the intelligence debate.

Geographical Models

Geographical models examine the mental maps of the mind and the relation of the construct of intelligence to the internal world of the individual (Cattell, 1971; Gardner, 1993 a & b; Thurstone, 1938). The theorists of the geographical models present theories that relate to primary mental abilities, structures of intellect, hierarchical concepts, presentations of two mental processes (associative and conceptual abilities), and factor analytic methods of analysis. Some of the more well-known psychologists using this model include Spearman (1927), Thorndike (1991), Guilford (1967,1981), Holzinger (1929,1945), Cattell (1971), and Carroll (1986).

Geographical models tend to be focused on questions that are structure related, which does not account for the cognitive or nature processes involved with intelligence. This theoretical model tends to illustrate individual differences. Two of the more challenging issues with this type of approach are the questions of how detailed the map has to be to reflect an accurate

picture of individual intelligence and of how broad the range of possibilities has to be for identifying factors. An infinite number of factors may be derived by continuous factor splitting, which results in endless answers with no specific solution. Using a factor–analytic model is very difficult, and testing these models comparatively raises all kinds of problems, including falsification of results, known as the *fudge factor*. The ultimate question is how predictive these factors are in terms of performance, say, for example in a school setting or within nature.

Computational Models

Computational models concentrate on information-processing factors as part of intelligent thinking, such as mental speed, verbal efficiency, and componential aspects (Hunt, 1990; Sternberg, 1982, 1985). *Computational* refers to the mind being viewed through the analogy of a computer. The mental processes are representative of software processes. The computational model appears to be a natural outgrowth of the geographical model. This model targets quite heavily the aspects of information processing and is interested more in commonalities than in individual differences.

Spearman has been credited with developing the geographic model, but he is also recognized for his role in the birth of the computational model. Spearman sought to integrate psychometrics into cognitive psychology approaches. Psychologists such as Carroll (1986), Brown (1986), and Sternberg (1990, 1995a, 1995b, 1995c, 2004) have significantly contributed towards the understanding of mental processes and their underlying information processing systems. One of

the drawbacks of this model is that we have no way of telling whether we are measuring underlying processes or factors underlying the processes. By studying the information processes of intelligence for each of the geographical factors, psychologists would be able to identify the computational mechanisms therein.

The computational model attempts to measure specific facets of intelligence. For example, Sternberg distinguished between three information processing components: metacomponents, performance components, and knowledge acquisition components (Sternberg, 1982, 1985). Metacomponents are higher order processes such as evaluating one's self as it applies to task performance. Performance components are lower order control processes as they would apply to strategies involved in performing a task. These strategies would involve encoding, inference, and application of stimuli and information. Knowledge acquisition components center upon acquiring or learning new information and the ability to retain this information in memory.

Ecological (eco) intelligence within NNIAL allows us to perform metacomponents with higher and lower order processes. SANE intensifies NNIAL by allowing more metacomponent processing. Do we really need to be compared to computers? This would seem another PAN moment.

Anthrolological Models

Anthropologically based models explore the issue of cultural invention within intelligence and manifestations of this invention. This model relates intelligence to the external context of the individual. The external approach of the anthropological model looks at each culture for

differences and how an individual adapts to these specific differences.

Therefore intelligence becomes isolated to a particular culture and is a nontransferable concept. The implications for IQ testing is that an intelligence test that is applied to another culture must be more than translated, it must be culturally relevant. The positive aspect of this model is that it takes into account context and external factors. The limitation of such a model in terms of the internal construct of intelligence is evident; consequently the emphasis is upon external factors, and the anthropological view ignores internal processes.

In addition, another major limitation is the ability to control for an enormous number of known factors and unknown factors in a field research situation. Cohen's NNIAL relates to environmental adaptation and can be subsumed within this model.

Biological Models

Biological models of intelligence use theories that incorporate biological, genetic, and epistemological information. The biological basis of this theoretical model is to understand intelligence and its associated processes in terms of brain functioning and structure. Neuropsychologists study the entire realm of cognitive functioning, and especially abnormalities or atypical manifestations. The results from these types of studies are often confined to specific populations being studied and are nonrepresentative of the population at large. For example, data may be collected from subjects with varying degrees of brain lesions. The conclusions drawn from these data are unique to that special population being studied.

Other studies may use EEG and blood flow measurements. EEG measurements appear to have shown consistently to have significant correlations with standard intelligence tests. Other biological studies have examined the link between blood flow in the brain and cognitive processing and have proven to be somewhat useful as a means of understanding intellectual functions (Posner & Raichle, 1994).

The epistemological framework of the biological model evolved through the works of Jean Piaget. Piaget (1972) envisioned a developmental approach towards intelligence. He saw stages of operations that developed from concrete to formal cognitive processing. Piaget was also interested in reasoning processes. He was not interested in the mistakes, per se, that a child would make on an IQ test, but rather why they made that mistake and what reasoning the child had behind the error. As a comparative note, Binet (1905) was more curious why children answered questions correctly, whereas, Piaget focused more upon why children answered questions incorrectly.

Piaget (1972) held the belief that intelligence tests were contextually based from social and educational perspectives and reflected little about the potential for intellectual growth. Similarly, sensory attraction nature ecological (eco) intelligence (SANE) would fit more into Piaget's model of identifying natural developmental growth and the potential for intelligence. NNIAL adds to SANE.

Furthermore, Gardner (1993a), while discussing Piaget's philosophy and theoretical thoughts, stated that "the intelligence test reveals little about an individual's potential for further growth.

Two individuals can receive the same IQ score, yet one may turn out to be capable of a tremendous spurt in intellectual attainment, while another may display the very height of his intellectual power" (p. 17). To put it in the terms of Soviet psychologist Len Vygotsky (1978), intelligence tests fail to yield any indication of an individual's "zone of potential (or proximal) development" (p. 18).

The conclusion is that intelligence tests do not predict psychologically defined developmental growth or life success in any context. Piaget may have been on the right track, but his theory has taken much criticism over recent years. Unfortunately, despite the major contributory significance and depth of his work, the finiteness of the operational processes is in question. Many theorists believe Piaget's work did not expand far enough beyond the formal operational years of development.

Piaget's theory currently faces many problems that are under review by psychological researchers and is being broadened by such neuropsychologists as J. P. Das (Kirby & Das, 1995).

As a by-product of the cognitive revolution, a coherent theory of cognitive processing has challenged traditional methods of studying and measuring intelligence. PASS (planning, attention, simultaneous, and successive cognitive processing theory of intelligence) identifies these operational units that are important to understand mental functioning: attention; simultaneous, successive processing; and planning. The PASS theory of intelligence is based on the neuropsychological work of A. R. Luria (p.155). Das (1995) has developed an alternative approach to measuring intelligence.

In 1998, Das launched a new intelligence test. This alternative approach to intelligence takes into account (a) cognitive processes being affected by a pre-acquired knowledge that considers sociological elements such as social and cultural contexts that embody external factors; (b) the false assumption that all children have equal access to learning opportunities; (c)
the identification of learning dysfunctions; (d) neuropsychological theory; (e) the connection of theory to practice; and (f) the identification of three cognitive processing units: attention, simultaneous operations, and successive operations.

Das (1995) wrote that:

> a neuropsychological view of intelligence is different from the existing psychometric tests of intelligence in trying to figure out how the mind works by anchoring its functions on the brain and by detecting dysfunctions. It does not seek to place people on a scale of merit, and therefore it is not a tool for social selection. (pp. 156-157).

Das's theoretical fundamentals place a great deal of emphasis upon Luria's neuropsychological theory and Vygotsky's distinction between social learning versus learning acquired in an instructional setting. The strengths and weaknesses of this approach remain to be tested in the future, although no one theory has yet claimed to be all encompassing.

Sociological Models

Vygotsky (1978), a Russian psychologist, discussed a sociological model of intelligence. Using the concept of a sociological model, Vygotsky argued that intelligence moves from the

outside to the inside. In contrast, Piaget argued that intelligence moved from the inside to the outside. Vygotsky saw sociological processes as being internalized and forming intelligence and adaptive behaviors. Vygotsky believed that social cognitive and social cultural factors could not be ignored if researchers wanted to understand cognitive development.

Another outlier of the sociological model, the theory of activity (Smirnov, 1994), is an extension of the sociological model, which connects personality and intelligence.

The sociological model is relatively young. Reuven Feuerstein et al. (1979) and Feuerstein (1980) has initiated some new research in this area. Feuerstein expressed his theoretical concepts as the nature of mediated learning experience. He believed that one-to-one interaction is one of the critical concepts towards understanding child development and intelligence. However, this model adds only to further divergent thinking of what might constitute intelligence.

Self-Governmental Model

The sixth model of intelligence is mental self-government. The Sternberg triarchic theory (Sternberg, 1987) expanded this concept of mental self-government to include the internal world of the individual, the external world of the individual, and the experiences of the individual. Sternberg (1987) related intelligence to internal and external environments by using a multifactorial and multidimensional governmental model that goes beyond an IQ value. Similar to a bureaucracy, there are many levels and hierarchies involved with the functioning of government, so Sternberg believed this is the case with intelligence: that much like a government

and all its complexities, intelligence is not static. He saw intelligence as fluid, multifaceted, and changing. Sternberg felt strongly about the political undertones associated with intelligence testing and the misuse of this research (Aby, 1990).

Sternberg posed three dimensional components of human intelligence: componential, experiential, and contextual (Sattler, 1992). The first dimensional component, componential, identifies the internal mechanisms of the individual in terms of intelligence. The experiential component looks at the individual and how he or she relates to both the internal and external worlds. And the third dimensional component, contextual, examines how the individual adapts to his or her external environment.

All theories of intelligence would probably find themselves as part of two or more models. As one example, Das' neuropsychological theory of intelligence embraces concepts from the biological, computational, and sociological models. In an attempt to understand the construct of general intelligence, a more inclusive paradigm is needed.

Intelligence, what it is and what it is not, as stated earlier, continues to be a baffling question. The scientific task force established by the American Psychological Association (1995) stated this point adequately: "The study of intelligence does not need politicized assertions and recriminations; it needs self-restraint, reflection, and a great deal more research. The questions that remain are socially as well as scientifically important" (p. 40).

Now that we understand the problem and literature, let us review the hierarchical presentation of intelligence illustrated by the ice-cream-cone model. The tip of the cone represents g, the

probable essence of intelligence. The essence of intelligence keeps the structure together. As one moves down the cone, the hierarchical structure increases in size as more theorists suggest varying hypotheses of abilities that might define or be included within the construct of intelligence. Approximately half way down the cone one might place Sternberg's triarchic theory. Sternberg (1995) linked cognition to contexts within subtheories. These subtheories account for internal and external influences and the individual's selection of both the internal and external worlds.

As we continue to move towards the bottom of the cone, we find Gardner's (1983, 1993a, 1993b, 2004) theory of multiple intelligences. To date, Gardner proposed that there are eight multiple intelligences. Gardner viewed that construct of intelligence in terms of human potential. The eight multiple intelligences specified by Gardner (2004) are linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal, and naturalistic. Gardner (1993a) developed this multiple intelligence theory to explain why people are good at some things and not good at others. Gardner (1993a) offered the following example:

> A young girl spends an hour with an examiner. She is asked a number of questions…the examiner scores the responses and comes up with a single number – the girl's intelligence quotient, or IQ. This number, which the little girl may actually be told, is likely to exert appreciable effect upon her future, influencing the way in which her teachers think of her and determining her eligibility for certain privileges…though it foretells little success in later life. (p. 3)

Note in this example, Gardner's assertion regarding the IQ quandary is the same as the arguments that have been postulated by Binet (1905), Jensen (1969), Sternberg (1987a), and others. The issues still remain of the ability to define intelligence, the ability of the educational community to meet the learning needs of children, ensuring that they reach their fullest learning potential, and the utility of intelligence measures as predictors for life successes. In the 1900s Binet believed that mental exercises should be given to slow learners in order to teach them how to think and learn (Gould, 1981, 1996). Accurate assessment was critical for Binet, and how teachers judged their students became a key concern as it related to objective assessment and placement. Binet's work tackled the issues of unbiased assessment and intelligence testing within academic settings.

Sixty years following Binet and Jensen (1969), questions arose shaking the foundations upon which educational programs were built. Jensen questioned whether IQ differences are a consequence of environment or cultural influences. He argued that environment is really a threshold variable controlled by genetic factors. Jensen found that only small IQ gains resulted from compensatory educational programs. He believed that teaching methods should be based upon other mental abilities and not IQ.

Later on, Sternberg and Ferrari (1995) attempted to see intelligence as a set of abilities. Sternberg and Ferrari appear to have been concerned about intelligence measurement as a predictor of school achievement. Sternberg's theory attempts to take an all-inclusive direction limited to school smarts, street smarts, and creative smarts. As indicated earlier by the ice cream

cone model, Sternberg seemed to set out to take into consideration, as defined by his Sternberg triarchic theory, all the circles except g.

Ecopsychology and Ecological Intelligence

Ecopsychology.

Ecopsychology is a discipline that refers to the connections and interrelationships between the individual, all forms of life, and the physical environment. Ecopsychology recognizes interactions within ecology and psychology. Roszak, Gomes, and Kammer (1995), in *Ecopsychology: Restoring the Earth/Healing the Mind*, wrote,

> Ecopsychology represents an attempt to find ecology within the context of human psychology and, in turn, to find human psychology in the context of ecology. The feelings of isolation and dysfunction that are so pervasive today have at their root a denial of our essential connection to nature and the non-human world. To heal, we must find our way back home.

Thomas J. Doherty (2009) argued that ecopsychology holds the promise that the promotion of human potential and healthy ecosystems can coexist and pairs self-discovery with ecological responsibility. (p. 100)

Ecopsychology is pluralistic and dynamic in its direction. As ecopsychology develops from infant to toddler discovery stages, a multidisciplinary sense of theory and application is introduced to researchers. The field of ecopsychology explores what it means to have an intelligent, synergistic person and/or planet relationship that encourages health. It presents us

with an ecopsychological identity and reminds us of our ancestral contract that we are responsible for the welfare of the earth.

Ecopsychology supports human-intelligent adaptation, wholeness, and connection within a changing natural environment. Cohen, interviewed by Doherty (2010), stated that:

> when you get nature working and highly involved in the story world as well as validated in the nonstory world of our mentality, then nature is whole. When nature is whole, it starts doing exactly what it does everywhere else. It starts restoring, recycling, renewing, purifying and it does that to our psyche as well. (p.55)

These effects of restoring, recycling, renewing, and purifying encourage both balance and positive health to person and planet.

Swartz and Martin (1997) found that if a school-aged youth had academic difficulties, the interaction between the person and the environment needed to be examined and that the use of an ecological approach was "of paramount importance" (p. 16).

Ecological intelligence.

Nature intelligence within our ecosystems reflects a hierarchical, decision-making intelligence and smartness found within plants, animals, and nature (Narby, 2005) that can connect back to the individual through a sentient intelligence (Cohen, 2011) called *ecological intelligence*.

Ecological intelligence, like ecopsychology, is a new and construct. The construct itself is often understood as a nature intelligence or naturalist intelligence. Doherty (2009) wrote that

Goleman (2009) in conceptualizing ecological intelligence (EI), combined intelligence (the capacity to learn from experience and deal effectively with our environment) with ecology (an understanding of organisms and their ecosystems).

Goleman envisioned EI in the context of cognitive psychologist Howard Gardner's (1983) theory of multiple intelligences. Doherty (2009) elaborated further about ecological intelligence:

> Unlike the construct of emotional intelligence, which had an existing research base, ecological intelligence, as described by Goleman, is a novel idea. Perhaps future works can help realize its potential. Golemans' work raises some important questions, perhaps the obvious being how does this ecological version of intelligence correlate with traditional measures of IQ and how can this be measured? (p. 102).

Summary

The literature review concentrated on traditional intelligence theory, NNIAL, Cohen's (2011) process of contact with nature on a nonverbal level, ecopsychology, and ecological intelligence. The literature review helped to create a theoretical framework to conduct the study without predisposing the researcher to bias, preconceptions, and subjective influences. Therefore, the theoretical framework allowed for a more undiluted and unbiased understanding of the field observations. Both the literature review and the theoretical framework support the central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ.

CHAPTER THREE: METHODOLOGY

Research Design

The research design answered the central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ. The intelligence theories debates, Cohen's Natural Attraction Ecology, and NNIAL (see Appendices D, F), Goleman's questions about the construct of ecological intelligence, and ecopsychology provided the guiding theoretical postulates for this study.

The online feedback and surveys posted on ecopsych.com from adult student participants in Project NatureConnect guided the research for the children. The online narratives relating successful response reactions to nature activities became the founding basis for the study. The successful response reactions from student adult participants raised an important question about cause and effect and the correlation of changed behaviors resulting from ecological (eco) intelligence within NNIAL.

The researcher's immersion in the same online activities (see Appendix G) in Project NatureConnect courses gave further insight to contact with nature on a nonverbal level. The researcher's self-inquiry and emergent ecopsychological identity helped to establish the parameters for understanding the field observations.

Grounded theory became the most appropriate principle to follow for this pilot study. Creswell (2007) wrote the following:

> Grounded is a good design to use when a theory is not available to explain a process…A theory may be needed to explain how people are experiencing a phenomenon, and grounded theory developed by the researcher will provide such a general framework" (p. 66).

The study sample consisted on average of approximately 10 to 19 elementary school children. The numbers fluctuated each year over a 3-year study period, because the number of participants was dependent upon enrollment. Sometimes more children participated in the nature–contact activities when all the grade levels were grouped together for this purpose. All the children commonly experienced the nature connection process as part of the school curriculum.

Participant Sample

The participants were elementary school age children ranging from Grade 2 to Grade 5, in a small, place-based curriculum private school. The qualitative data presented in this study were collected from the beginning of the school year in 2009 to the completion of the school year in 2011. In 2009 and 2010, the class gender distribution was 50% girls and 50 % boys. In 2011, the participant sample number fell to 10 students as a result of local failing economic conditions. The participant sample in 2011 consisted of two girls and eight boys. All participant children lived in a small urban area surrounded by natural wildernesses. All participant children were Caucasian and spoke English.

Activities Approval Process

Before beginning field observations and leading nature activities, an ethical approval process was followed. Various ecopsychology course-related materials from Project NatureConnect that were authored by Michael J. Cohen were presented to participant teachers and the director of the school to familiarize them with natural attraction ecology. Meetings were scheduled with teachers and the director of the school after the materials were disseminated. After approval for the research study was acquired from the teachers and director, parents were communicated with though one-to-one interactions. Once the parents agreed to allow their children to be observed, the teachers introduced me. Nature–contact activities began shortly after the children participants felt comfortable with me coming along for their nature saunters.

Issues of Anonymity and Informed Consent

Verbal and written permission was received from the director of the participating school, from teachers, and from parents. I assured the parents individually that their children's identities would remain anonymous.

Verbal and Written Debriefing

The director of the participating school, all participants, and teachers were debriefed frequently and directly through verbal communications over the 3 years of this study. No written debriefings were required.

Role of the Researcher

The role of the researcher is a significant one, because potential for bias always exists. It is important to note that as researcher I had prior experience in an educational setting with children, both as an undergraduate student and with my own children. It is equally important to document that I, because of that prior experience, was able gain the trust and confidence of the teachers, parents, and children throughout this research study.

My main role within the context of this study was to observe without any intrusive measures (such as notebooks, recording or video devices, probing questionnaires) changes in adaptability, behavior, and cognitive processing skills during and after contact with nature. My secondary role involved leading activities and teaching the primary principles of NAE (Natural Attraction Ecology) and NNIAL. The primary principles of NAE and NNIAL (see Appendices D, E, F) taught to the participants include (a) asking permission before entering a natural area, (b) giving respect to a natural area, (c) observing in a natural area, (d) experiencing a natural area nonverbally, (e) following sensory direction to attractive spots and fauna, (f) communicating in a journal the nature experience, and (g) giving thanks before leaving a natural area. My third role,

as the researcher, was to observe behaviors in the moment, without influencing the participants' direction within the natural setting as well as in the classroom setting upon return from the nature–contact activity.

Data Collection

Data collection was conducted using non-influenced field observations, which allowed for free discovery of theory (Glaser 1967, 2002). The method of observing without influencing field observation outcomes was particularly important to this study. I was an observer whose role was to explore for pure interactional outcomes without predisposing sample participants to a particular direction, thought, or expected behavior.

Data were collected from two sources. The first source was from adult student participant reactions at ecopsych.com (see Appendices D, I, J) and the researcher's self-inquiry through Project NatureConnect online courses. The second source of data collection was from the elementary school children participants. Data were gathered during a normal school year, which spanned a September-to-June attendance calendar. The second source of data collection included the following:

1. Nature-connecting activities included saunters in nature, held almost weekly in all weather conditions except deep snow, subzero temperatures, and wind chill conditions that could cause frost bite. Nature-connecting activities also included connecting with plants within the classroom environment. The participants cared daily for their plants and gave each plant a meaningful name.

2. Field observations consisted of participants walking various nature trails locally and travelling to some nature–contact activities within a 2.5-hr driving distance from their school location.
3. Participant documentation (see Appendix H) through journaling, observing the environment, connecting to nature through attraction, connecting to nature through day dreaming and imagination, connecting to sensory experiences, and listening to the environment were also important activities.
4. The researcher observed the participants tracking, identifying birds through sight and sounds, watching out for the resident black bears, walking like various animals, drawing feelings and natural attractions, naming fauna, identifying edible plants, cooking these plants, building a teepee, and finding attractive secret spots for sensory connecting to nonverbal cues within the natural space.

Summary

In summary, the study research design and methodology targeted directly the exploration of any intelligence shifts in g and IQ through accessing ecological (eco) intelligence within NNIAL. In order to address this shift within intelligence, the participants were given opportunities to make contact with nature at nonverbal levels (Cohen, 2011).

The participants were part of a specific homogenous sample selected to "inform an understanding of the research problem and central phenomenon in the study" (Creswell, 2007, p. 125). Because a theory construct was not available, the research design and methodology drew

upon grounded theory, current intelligence, and ecopsychology literature.

And because a theory construct was not available, a theoretical framework was generated to meet this void in the research literature. The research design and methodology always moved directly towards investigating the central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ.

CHAPTER FOUR: RESEARCH FINDINGS

Results

Data arrangement in the study was guided by grounded theory (Glaser, 1967) and the search for what intelligence construct phenomena are presents them as a paradigm shift within intelligence. A narrative–logic strategy was the presentation method used for the data. Chenail (1995) explained that in narrative logic, strategy "researchers plot out the data in a fashion which allows them to transition from one exemplar to another" (p. 61).

Commonalities in Adult Participant Sample

The results from the participant reactions at ecopsych.com were studied for any commonalities among the data. Some of the commonalities identified included stress reduction, more intelligent behavioral and learning strategies, better coping skills, elevated comfort in social situations, more positive coworker interactions, healthier outlooks, increased physical activity, and a newly acquired closeness with nature. The commonalities exhibited an ecological (eco) intelligence within NNIAL that supported more of what represents general intelligence. A paradigm shift presented itself within the adult student participants. The resulting intelligence paradigm shift established the groundwork for the created theoretical framework and central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ.

Field Factors Identified in Children Sample

All results from the data analysis were extrapolated from all the general field observations of interactional factors, which could be recognized easily as factors representative of intelligent behaviors, ecological (eco) intelligence, and NNIAL. During the field observational phase, every attempt was made not to interfere with the participants' nature activities. Paramount to this study was maintaining objectivity and allowing for natural observations to flow. However, the study observations were directed towards identifying ecological (eco) intelligent behaviors and what it means to be generally intelligent. This approach to extract the interaction results was the most practical and simplest direction to take because of the complex richness of the qualitative data. A list of interaction field factor observations was developed from the data collection. These interaction field factor interactions included (a) parent–child interactions, (b) teacher–child interactions, (c) child–child interactions, (d) child–nature interactions, (e) child–secret spot interactions, (f) child–classroom interactions, and (f) child-researcher interactions. These seven interaction field factors provided a general, beginning point classification from the observations identified in the various natural spaces, as well as any nature–contact activities within the classroom. The rationale for choosing interactions as the classification is because interactions more closely require metacognitive awareness and intelligent processing of sensory stimuli, putting sensory stimuli into action and applying the right skill, coping mechanisms, or behavior. Interactions also illustrate how a child might listen to others, question or problem

solve, consider other points of view, apply already learned knowledge to a new situation, experience the senses and a sense of wonder, exhibit creativity, overcome impulsiveness and distraction, and process verbal as well as nonverbal language.

Field Factor Observation Results

Chenail (1995) wrote, "Keep the whole process as simple as possible: Look at the data and record that what you see. Report nothing more and nothing less! If you keep to that aesthetic, your data will help to support the validity of your analysis" (p. 61-62).

The results in this study are rich content obtained objectively from 3 years of observational study. The frequency of intelligent interactions observed as a result of nature–contact activities became the center of interest in pursuing any data observations, as examples of a paradigm shift within intelligence.

The interaction field observation results derived from the data collected accounted for a paradigm shift within intelligence, as well as ecological (eco) intelligence within NNIAL. The data results for field interactions are as follows:

1. *Parent–child interactions* were more respectful and kind.
2. *Teacher–child interactions* reflected curiosity, wonder, and interest in the teacher's or leader's instructions. There was a willingness to know and understand more about nature and their natural space. There was more respect for the teachers. Impulsive and distracting behaviors decreased. The children listened more and observed more.

3. *Child–child interactions* improved, with more compassion and generosity shown to each other. Children were more willing to help other children and consider other points of view. The children were more accepting to other children with physical or intellectual challenges.
4. *Child–nature interactions* grew more sensory and with experiential connections. The children showed more interest in natural attraction behaviors, respect, and gratitude. Children actually used their sense of natural attraction to observe plant and wildlife living in their natural space. Children developed keen nonverbal connections to nature. The children showed a developing ecological awareness (see appendix H) over the course of this study. Children expressed more interest in experiencing their natural environment.
5. *Child–secret spot interactions* involved nonverbal contact with nature and an understanding of more of the 53 senses. The children—through an intelligent, natural attraction, sensory process—chose their secret spots for the school year. Each child's secret spot was a natural space where the participant wrote or drew in his or her journal about his or her sensory and visual expressions. The secret spot became a favorite natural space to connect nonverbally with nature and become part of the nature experience.
6. *Child-classroom interactions* became less stressful. Children displayed less impulsive and distractive behaviors. There was more willingness to work at daily tasks such as math or writing after a nature–contact moment.

7. *Child–researcher interactions* became trusting, more open, and showed greater degrees of nonverbal connections to the researcher and nature.

Findings

The focus of the study observations was examining intelligent choices and intelligent interactions within the child's environment following nature–contact activities, including nonverbal nature–contact activities through natural attractions. Findings showed some type of main effect within general intelligence that was attributed to ecological (eco) intelligence shifting impurities within g and IQ. The study demonstrated an ecological (eco) intelligence growth or expanded smarts within a nonverbal, natural environment through NNIAL.

In reviewing the 3 years of observations, ecological (eco) intelligence emerged within all participants, which translated into an intelligence of understanding and adaptability within their natural and unnatural environments (see Appendices G, H, I, J). The participants were no longer "dumbed down" ecologically. All participants accessed Natural Attraction Ecology and NNIAL. Lost or blocked ecological sensory connections allowed for more use of the intelligence and intelligences within the adult participants. New sensory connections especially stimulated the curiosity of the elementary school children sample. All participants reported a growth and freeing of buried senses into consciousness (Cohen, 2011) as well as a freeing of intelligence into consciousness.

Life-changing results by adult participants were documented by these same participants in Cohen's online courses. Participants reported finding release from stress, more suitable

problem-solving strategies, greater coping abilities, more awareness of their senses, and more connections to nature. The participants developed more holistic healthiness and a more active person–planet relationship. The adult participant feedback reflected an emerging change of intellectual strategies and behaviors.

Some type of preprogrammed ecological intelligence construct was at work. The adult participants implemented a preprogrammed sensory intelligence, ecological (eco) intelligence within NNIAL that shifted their behaviors in more frequently intelligent directions. Adult participants used ecological (eco) intelligence found in nature to cope better, find solutions in crisis situations, conquer addictions, successfully interact with challenging coworkers, find their life's purpose, learn trust, gain confidence, and rebuild self-esteem. After frequent contacts with nature, participating in nonverbal nature experiences (See Appendices E, F), adult participants sought out more intelligent outcomes.

The elementary school children interactions highlighted intelligent nature understandings unrelated to factors described in the intelligence literature. Because of the nature–contact activities interactions experienced by the elementary school children participants, their nonverbal connections to nature were nurtured. Nurturing from nature helped the elementary school children participants to become less impulsive, less distracted, more sensory connected, more observant, and less anxious. The children developed respect and gratitude for their natural environment, as well as for others. Children were more accepting of other children with visible physical and intellectual challenges. All the children expressed more interest in knowing more

about their natural environment. The children felt sensory connections building within them that attracted them to the outdoors. These sensory connections encouraged children to become more aware of their planet and to develop more intelligent, respectful ways of communicating with others and with nature. A naturally occurring ecological (eco) intelligence began to emerge within the children.

One example of this emergent ecological (eco) intelligence is illustrated in a journal sample (see Appendix H) of a young girl (who started out in this study in 2009, at age 7 years old, and turned 9 years old when the study concluded in 2011). The young girl's first introduction journal note regarding her nature environment was simply, "There are lots of logs here."

After frequent nature–contact activities, ecological (eco) intelligence within NNIAL began to shift this young girl's focus from a concrete, small perception of her natural space to a metacognitive connection of NNIAL. Three years later, the same young girl was able to write and express the following:

> LIVE YOUR LIFE
>
> Please live your life
>
> full and strong,
>
> be happy and not worried,
>
> be respected and loved,
>
> treat yourself well,
>
> give thanks to what you have,

treat the earth well too,

pick up trash and be respectful,

don't cut down trees or litter,

give respect to others,

don't fight or yell,

be respectful

and

the thanks will come to you!

Regular exposure to nature–contact activities revealed that the elementary school children participants began to nurture their own sensory attraction ecological (eco) intelligence, develop their natural-systems thinking processes (NSTP), nurture their understanding of natural connections, build nameless attractive intelligent loving (NNIAL) experiences within that moment, release their internalization of prejudice against nature (PAN), and demonstrate a paradigm shift within their own intelligence.

Life Connectors

Children sensed trees through nonverbal experiences as life connectors to themselves. They experienced connections to the ground and sky. They touched and sensed the earth and fauna and flora around them. During one saunter to their secret spots the children spotted a black bear very close, because the children had become more aware of sensory stimuli and signs of change within nature. The elementary school children participants remained calm and decided

collectively to continue journaling in their secret spots. The reason the children did not run off was because they felt naturally attracted to stay. The children did not feel threatened. The black bear was not spotted again. Their observational skills and natural attraction skills had increased intelligently.

During other nature–contact activities, children quietly fox walked (walking in the manner of a fox: observant, sensing attractions, and taking soft steps) to their secret spots. For example, on the ways to their secret spots, the children discovered geese and ducks playing in the shallow river bed and on shore. Each child took turns connecting to these fowl. The children watched and sensed the wonderment of the geese and ducks interacting together. Interactions became a greater part of reinforcing their ecological (eco) intelligence process of making life connectors of nature to person and person to nature.

Each nature–contact activity conducted over the 3 years of this study saw each elementary school child participant incorporating more intelligent behaviors. They became more intelligent about their choices. Math became fun. Social studies became interesting. The planet earth became part of their life connections. Outdoor physical education and the nature–contact activities became viewed as life connectors.

Connections in an Unnatural Environment

Each child learned to connect also in unnatural spaces, such as his or her classroom. In one nature–contact activity within the classroom, the elementary school participants were asked to bring a plant to school. The children were asked to connect to their plants through natural

attractions in the same way they connected through natural attractions during outdoor saunters. The children saw this as an opportunity to connect to nature using sensory experiences from school excursions, as well as other nature–contact activities at home with their families and their friends.

When the children were asked to make connections with their plants and share nonverbal experiences, they were able to make these connections easily. Some examples of the plant natural attractions that elementary school participants shared with the researcher included seeing their plant shapes resembling a snow covered ski slope, visiting the watery pools and falls in Hawaii, connections to their plants growing outside their homes or the deserts of Nevada. If a child became stressed, felt anxious, was distractible or experiencing cabin fever, the teacher permitted the child to interact in the moment with his or her nature-connecting plant buddy before moving on with his or her immediate tasks. Each child participant reported feelings of attraction to his or her plant, and a sense of renewal. More intelligent coping patterns and on-task behaviors within the classroom were seen by their teachers.

Summary

Findings showed that a nature-directed ecological (eco) intelligence emerged within adult and child participant samples. Adults and children alike benefitted from their NAE activities (see Appendices D, E, I, J) and nature–contact activities. PAN subsided and new nature perspectives became apparent.

The feedback online at ecopsych.com and journal entries, as well as field observations (see Appendices F, G, H, I, J) indicated a paradigm shift within intelligence. All participants redirected their life skill sets away from traditional conditioning and ways of learning to interacting at higher, more adaptive cognitive levels of functioning. Tangible evidence was gathered of an intelligence construct that fulfilled the burden of proof of an existing, preprogrammed, observable, and measurable ecological (eco) intelligence within NNIAL.

CHAPTER FIVE: DISCUSSION

General Discussion

The most important role of this study was to prove or disprove that ecological (eco) intelligence shifts impurities within g and IQ, which, in turn, may or may not facilitate a paradigm shift within intelligence. The study therefore had to make sense. Both Collier Butler (cited in Kaler, 2011) and Strauss (2008) suggested further criteria to assess the caliber of the qualitative paper guided by grounded theory. The first is fit. Do the findings resonate with the participants and the researcher? The second criterion is applicability. Do the findings offer new insights and understandings? Third is logic. Do the findings make sense? These principles of fit, applicability, and logic were followed in this study.

A paradigm shift within intelligence was found that addressed the central qualitative hypothesis whether ecological (eco) intelligence shifts impurities within g and IQ. The theoretical framework that was produced, inductively guided by grounded theory (Glaser, 1967), expanded upon ecological intelligence as a potential intelligence within Gardner's (1983) theory of multiple intelligences and general intelligence.

Theoretical Framework

The theoretical framework examined a paradigm shift within intelligence. Intelligence theories and the emerging field of ecopsychology guided this research. A theoretical framework was created, supported by the findings, to meet a need and void identified within the research

literature. Goleman (2009) asked how his ecological version of intelligence correlates with traditional measures of IQ. This study asked the question whether ecological (eco) intelligence within NNIAL (Cohen, 2011) shifts impurities within g and IQ.

How the Theoretical Model Works

When Christopher Columbus sailed to find a route to Japan and the eastern lands of the globe, he never expected to land in what are now known as the Caribbean Islands. The indigenous peoples of the Americas never expected to see such strange-looking ships or odd-looking people. Initially, the indigenous people's intelligent sensory recognition patterns did not see the three ships on the horizon. The shapes of the ships were beyond their ability to see and understand. It was not until the ships landed that an intelligent learning pattern was established among the indigenous peoples for the future use of recognizing these ships. Because we cannot consciously understand something until we have learned it and stimulated the appropriate sensory receptors within the brain, does not mean something is not real. This same sensory receptor recognition applies to knowing the intelligence–nature connection.

Nature exists everywhere, and because nature exists everywhere, it is understood everywhere and it is real. Nature is the ideal agent to catalyze an understanding of a paradigm shift within general intelligence and ecological (eco) intelligence within NNIAL. If it is general intelligence that needs to demonstrated, it would seem to make sense that this measurement should come from a general, universally known source such as nature.

According to Cohen (2011) a person and planet act together connected by a web-of-life imperative. The intelligent web of life is part of a preprogrammed general intelligence, and nameless, intelligent and attractive love (NNIAL).

This theoretical model uses nature and Cohen's (2011) body of ecopsychology research as the starting point for all intelligences within humans. Humans are nature and linked to nature since conception. Nature fits and makes sense (Strauss, 2008).

The ecological (eco) intelligence component of the theoretical model connects nature and intelligence. Doherty (2009) wrote that "to tap into this intelligence, Goleman (2009) advises readers to get beyond the thinking that puts mankind outside nature, the fact is, we live in enmeshed ecological systems, and impact them for better or worse" (p. 45). The first two inputs within the theoretical model are functions within nature, NAE and nonverbal experiences within nature.

Cohen (2011) defined NAE (see Appendix F) in the following words:

> Natural Attraction Ecology is a holistic environmental process that explores nature's blending of the ways of natural systems with the ways of our psyche, a blend that Industrial Society teaches us to ignore. Researchers in this science observe that by the time we are born, we have at least 53 natural senses that enable our thoughts and feelings to make sense so we may live in balance with Planet Earth and each other. (www. http:// ecopsych.com)

NAE is the intelligent, nature-based *process* that gets a person to his or her metacognitive levels within sensory awareness. Nonverbal experiences in nature are representative of the

actions required to initiate the NAE process. Goleman (2009) described ecological intelligence as an "all encompassing sensibility" (p. 44).

NNIAL (see definition of NNIAL, p. 40) is the nameless, attractive, *intelligent* love developed through in-the-now or in-the-moment connection with nature. It is the nameless, nonverbal experience and emotion gained through natural connections. NNIAL is the preprogrammed intelligent relationship and interrelationship between the person and the planet. NNIAL forms within the individual through natural attractions stimulated in the natural setting and through nature–contact activities. NAE and nonverbal experiences are cohesive factors that bond the NNIAL construct. As NNIAL connects to general intelligence and intelligent interactional behaviors, NNIAL becomes an identifying structural component of ecological intelligence within the individual. Individuals who experienced the nonverbal, sensory and emotional components of NNIAL used more intelligent interactions with others and in nature. Doherty (2009) indicated that for Goleman, ecological intelligence is being intelligent about the ecological impacts of how one lives in one's daily consumer choices. Cohen (2011) expanded upon Goleman's conceptualization of ecological intelligence by adding NNIAL into the general intelligence equation. In the working mechanics of the theoretical model, NNIAL shores up Goleman's construct of ecological (eco) intelligence through sensory experience, person–planet emotional connections, and intelligent interactions.

The final aspect of the theoretical model of ecological (eco) intelligence shown is seeing that EI is part both of general-intelligence (Spearman, 1927) and multiple-intelligences theories

(Gardner, 1993). It would make sense that ecological (eco) intelligence within NNIAL as described by Cohen (2011), and ecological (eco) intelligence as described by Goleman (2009) coalesce into a single, more holistic theory of ecological (eco) intelligence. Therefore, the more complete ecological (eco) intelligence construct contributes depth to g, representing a purer construct of general intelligence.

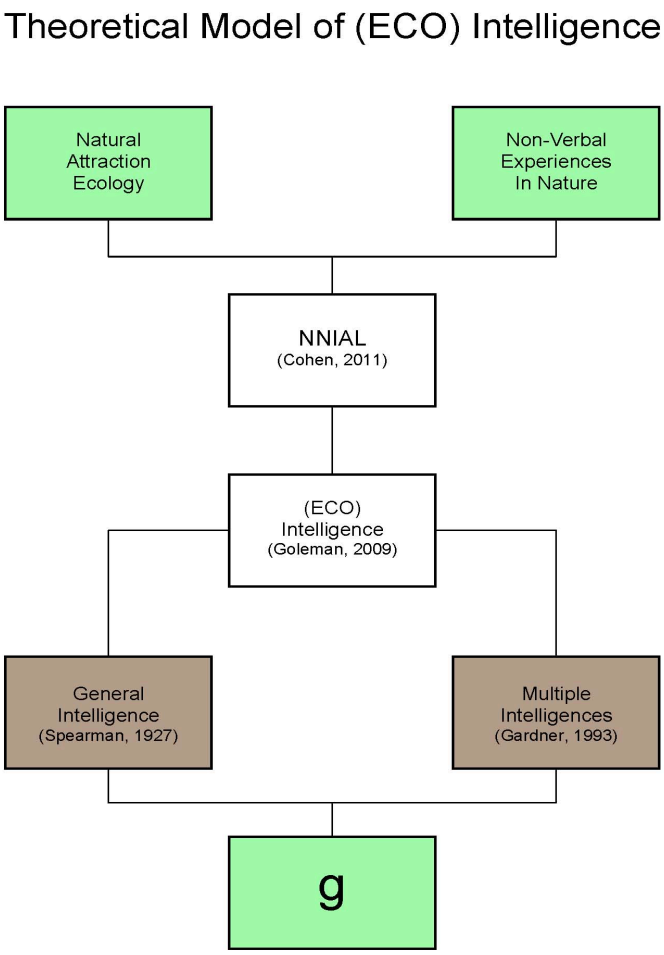

Figure 1. Theoretical model of (eco) intelligence.

Significance and Impact of Study

This study was an explorative investigation into a pure, main effect that examined whether ecological (eco) intelligence shifts impurities within g and IQ. The study results and findings indicate that ecological (eco) intelligence does cause a paradigm shift within intelligence. The significance of this study is that it is original research about a nature intelligence revealed both in adult and in elementary-school-aged children learning through ecological (eco) intelligence within NNIAL (Cohen, 2011). The impact and significance of this study has many implications:

1. The theoretical model makes a contribution to the field of ecopsychology. The theoretical model provides a starting point for new research.
2. The study addresses a void in the research literature. The study provides momentum for a research trend to fill that existing void.
3. The study opens the door to redefining general intelligence.
4. The study broadens the depth of the construct of ecological (eco) intelligence. Future research can study more of the variables that may be identified with ecological (eco) intelligence.
5. NNIAL is identified as a scientific factor within ecological (eco) intelligence and Natural Attraction Ecology (NAE). More research methods can be developed to measure NNIAL as a factor.
6. The understanding of NAE is expanded and therefore recognized scientifically as something quantifiable, requiring more research into natural attraction phenomena.

7. The study identifies prejudice against nature (PAN) as a researchable behavior or set of behaviors. Clements, R. (2004) concluded that "children spend less time playing outdoors than their mothers did when they were young…even in rural areas" (p. 75). Children do not explore nature as much as they should. Children are often restricted in their natural environments with strollers, carriers, play yards, and leashes. The *American Journal of Play* in 2009 reported a survey of 2,400 mothers around the world who were asked how often their child explored nature. The responses were as follows: China, 5%; Morocco, 7%; Indonesia, 7%; India, 18%; South Africa, 18%; UK, 25%; US, 33%; and France, 45%. Children in the Netherlands (Verboom, van Kralingen, & Meier, 2004) have low contact with nature. Half the students in their study "never go to nature reserves and parks, zoos or botanical gardens. 11 % of these children said there is no love for nature in their homes" (Verboom, van Kralingen, & Meier, 2004, p. 8).
8. The study challenges the research directions within intelligence and how we view intelligence and intelligent behaviors.
9. A better appreciation of the benefits of nature appreciation are documented for future research.
10. New mental health and physical eco therapies can be developed implementing the theoretical model for ecological (eco) intelligence.

11. The study shows nature as the catalyst that changes intelligent behaviors. More study is needed to understand exactly what mechanisms facilitate these changes within ecological (eco) intelligence.
12. Correctional populations might use this created theoretical framework and its associated nature activities to develop programs to help reduce violence, aggression, and crime within incarcerated population groups, with progression to the development of post release support groups. Recidivism rates, upon further study, may be impacted positively.
13. Sternberg (2004) identified a need for new models of intelligence in the new millennium, because no approach is perfect. This study meets that identified need.
14. Akamai University can use this newly created theoretical framework to obtain more research opportunities and grant funding towards developing new models of intelligence. This study supports the global sustainability mission of Akamai University and the growth of the fields of organic psychology and ecopsychology.

Limitations

Certain limitations are noted within this study. These limitations are a result of the nature of this study presenting itself as a sensitive theoretical explorative investigation into ecological intelligence within NNIAL and g. These limitations include the following:

1. Because this study targeted a void in the literature, it is a starting point for new ways of understanding ecological and general intelligence. Therefore, the formatting of this dissertation logically informs the reader of the intelligence and IQ debate to date. After the intelligence and IQ debate is presented, it brings in the central question to the reader. Other qualitative theoretical dissertations based in grounded theory were reviewed to understand the clarity needed to grasp the subject matter of this study. The limitation here is that the logical progression of the presentation may not always be transferable to other studies.
2. This study did not describe the area of emotional intelligence. Salovey and Mayer (1990) defined emotional intelligence as a type of social intelligence that involves the ability to monitor one's own and others' emotions, to discriminate among them, and to use the information to guide one's thinking and actions. The breadth of Mayer and Salovey's (1993) definitions include mechanisms and manifestations that include emotionality. emotional management, and neurological substrates. The authors suggested that emotional intelligence is related to general intelligence in that it is best represented as an

ability within intelligence. Their conclusions would support the comments of Woodsworth (1947) that a scale to measure IQ should contain tests demonstrating not being afraid, angry, or anything that arouses emotions affecting testing outcomes. The ability of positive self-emotional regulation (Johnsen, 2011) is part of the ability of emotional intelligence to extract a pure reasoned intelligence, but in itself is not general intelligence. Goleman (1995) wrote as follows:

> In a sense we have two brains, two minds - and two different intelligences: rational and emotional…This turns the old understanding of the tension between reason and feeling on its head: it is not that we want to do away with emotion and put reason in its place, as Erasmus had it, but instead find the intelligent balance of the two. The old paradigm held an ideal of reason freed of the pull of emotion. The new paradigm urges to harmonize head and heart. (pp. 28 - 29)

3. This study limited itself to the mind, of exploring rational intelligence and local perspective of ecological intelligence as identified in the theoretical framework. Emotional intelligence is deemed an ability or meta-ability within general intelligence and ecological intelligence. Consequently, research in the area of emotional intelligence would more likely take a direction that would investigate individuals who remain open to information and consequently have higher IQs, in the absence of any other differences in mental abilities (Mayer & Salovey, 1993).

4. Another limitation is that this study did not address closed-head injuries, arterial venous malformations, brain seizure activity, structural absences of the brain anatomy, and head trauma of any kind. Intelligence discussed in this study is independent from motor responses, conditioned behaviors, cognitive abilities, structural deviations of the brain matter, and invasive surgical procedures such as hemispheric resections. Head traumas, surgeries or injuries do not necessarily indicate medically any deviation in intellectual functioning or intelligence within the affected individual. Head injuries, surgeries, and traumas present unstable and complex subject research material unrelated to this study.

Non-limitation

The non-limitation of this study is that the results may be applied in almost any setting with any age group.

Future Research Initiatives

As ecopsychology develops as a field, new ideas and constructs will continue to become apparent. Theorists such as Cohen (2011) and Goleman (2009) have opened higher windows to new research within ecopsychology and to research that responds to this study's central qualitative hypothesis of whether ecological (eco) intelligence shifts impurities within g and IQ. The future initiatives would include the next step of deciding whether ecological intelligence fits within the construct of g or the theory of multiple intelligences, as well beginning the process to fill the global void of knowledge within the literature research. A significant need exists to

further study how ecological (eco) intelligence causes a paradigm shift within general intelligence.

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APPENDICES

APPENDIX A: Teacher's letter

March 11, 2011

Dr. Michael J. Cohen

Project Nature Connect

Institute of Global Education, Department of Integrated Ecology

Re: **Sandra Kolbl-Holman Doctoral Candidate**

I wish to speak of the contributions which Sandra Kolbl-Holman made to enhance the sense-of-place curriculum during the 2009-2010, and 2010-2011 school years at Clark Fork School. Our small private school has adopted a framework in which place-based education is the cornerstone for much of our curriculum delivery. As part of this emphasis, we take our students on weekly "saunters" into nearby natural areas within walking distance of our school. Each student has a "sit-spot" to which they return repeatedly so that each may develop an intimate relationship with that corner of the natural world, and ultimately, be able to transfer the knowledge and love of that place to the greater world. We employ a variety of playful, thought-provoking, experiential, artistic, and science related activities to help our children tune-in to their own natural attractions to, dependence on, and relationships with the natural world.

For the past year and half, Sandra Kolbl-Holman has volunteered to accompany our 3rd through 5th grade class on these weekly saunters, and frequently offered to lead our students in activities which were designed to expand awareness of their connections to the natural world. She used a variety of techniques and participatory exercises to help the students explore their relationships to the riparian area where we frequently walked, played cooperative games, and wrote in journals. She used symbolic activities, physical activities, journaling techniques, and guided imagery. She also introduced symbolic routines which the children embraced wholeheartedly, such as asking permission upon entrance to the wild-scape we were visiting, and expressing thanksgiving as we departed. During activities in which I led the class, Ms. Kolbl-Holman contributed positively to the conversation and encouraged our students to participate in greater depth, and always in a way that would show respect and sensitivity for the natural surroundings.

In addition, she employed alternative activities to connect our students to nature on those rare days when circumstances forced us to cancel our outdoor adventure and remain inside, using artwork and our classroom indoor plants as a focus.

Ms. Kolbl-Holman was generously informative to the teaching staff by making available some of Project Nature Connects literature and materials to help us expand our repertoire of outdoor activities with the students. Ms. Kolbl-Holman's enthusiasm

and contributions to the class seemed to have had an uplifting and positive effect on our students, and the journal entries in response to her guidance will be a life-long record for these students that may continue to influence them into the distant future.

I have had many years of experience, extensive college coursework, and a variety of training opportunities related to the fields of elementary education, place-based studies, and environmental education. I value the contributions which Ms. Kolbl-Holman made to our saunters and other placed-based curricula which enriched the experiences of my students over the past year and a half.

Sincerely,

Shirley N. Atkins 3-5th grade teacher,
Clark Fork School
2525 Rattlesnake Dr.
Missoula

APPENDIX B: Verification of NNIAL Hours

From: Karin Fodness <karin.fodness@yahoo.com>

Date: Thu, Feb 24, 2011 at 2:56 PM

Subject: Sandra Kolbl-Holman

To: nature@interisland.net

Cc: Sandra Kolbl-Holman sanskritvisions@gmail.com

Hello,

I am writing at the request of Sandra Kolbl-Holman. She has volunteered close to 504 hours for Clark Fork School over the last couple years. Along with time in the classroom and leading activities, she has worked to develop a plan for starting a nature place-based middle school.

If you have any questions, please do not hesitate to contact me. Thank you.

Karin Fodness

Director Clark Fork School

Phone: 406-728-3395 fax: 406-549-3156 www.clarkforkschool.org

APPENDIX C: History of Teacher-related Judgments and Intelligence

Historically, Binet was probably one of the first to recognize a need to assess children accurately from an intelligence standpoint. Eventually, Binet became a pioneer in the field of intelligence testing. He developed an intelligence test with Simon, which became the Binet-Simon Intelligence Test (Binet,1905, Binet &Simon, 1973). This test is now modified and marketed under the name of the Stanford-Binet.

Binet was also concerned about the assessment of children made by others such as teachers and physicians. Pedulla et al (1980) noted Binet investigated the relationship of teacher ratings to standardized tests. Binet and Simon (1973) appeared to be extremely interested in what the teachers thought of their abilities to judge the intelligence of the children in their classroom.

Binet followed-up his study of teacher-related judgments by sending a questionnaire to teachers in the Paris school district that asked two questions. The first question explored the issue of the number of errors that the teachers thought they might have committed when judging a student's level of intelligence. The second question inquired about the methods the teachers used to arrive at the estimate of intelligence.

It seems the rationale behind Binet's work in the area of teacher-related judgments was that he wanted to ensure that students were not misdiagnosed as idiot

savants, because of bad or biased assessments. Binet elaborates about his concerns by explaining an example of a so-called problem child who may be labeled as uneducable by the teacher, and then the physician accepts the teacher's opinion without question. The end result is that the so-called problem child would have been placed in an institutional setting with no hope of furthering his or her schooling based upon a series of supportive documentation that might have grown from one teacher's evaluation.

According to Binet, these situations were occurring frequently. The teacher's evaluations were a means to resolving problems for the teachers and maintaining a certain social status within the classroom. Binet's assertion was that there was a definite need to develop an intelligence test that would measure a child's intelligence, which in turn would offer a level of objectivity that a teacher may not be able to reach.

The thesis of the question Binet asked in 1905 was whether intelligence tests really add anything beyond and above what the teacher's know about their students still remains largely unanswered. The following section outlines some of the findings in the education and psychology literature.

Teacher-related judgments studies: a brief review

Rosenthal and Jacobson (1968) findings indicated students that were expected to achieve successfully by their teachers did in fact do better. The teachers also rated their students who were expected to achieve successfully higher on variables of

intellectual curiosity, personal and social adjustment and need for social approval. Rosenthal and Jacobson were able to strongly suggest a link between expectancy advantage and the achievement success of a student.

Nash (1976) identifies studies by Burstall, Jackson, Douglas, Goodacre, and Pidgeon which show a relationship between teacher expectations and student achievement. In these studies low teacher expectations functioned negatively against working class or perceived disadvantaged students. McCombs and Gay (198?), in their study findings, noted that social class was not a factor, but race affected teacher judgments. High IQ children, in general, were evaluated more positively than low IQ children. However, the high IQ child that was Hispanic was evaluated less positively than the low IQ child that was white. It is interesting to note that 45% of the teachers used physical appearance to make judgments as if appearance was a predictor of ability. And teachers tended to use IQ information to change their judgments, but were not aware of the race factor in the assessments.

Other studies show a wide of variety of results for other areas of assessment. Madon, Jussim and Eccles (1997), examined negative and positive self-fulfilling prophecies and student susceptibility. These researchers found a weak tendency for positive self-fulfilling prophecies to be more powerful than negative self-fulfilling prophecies.

Teacher over estimations tended to increase achievement and teacher underestimations tended not to decrease achievement. And teachers' perceptions tended to predict more accurately for low achievers than high achievers. Gaines and Davis (1990) found a difference for perceived low achievers. The fourth grade teachers, in their first study, had similar accuracy rates for white and minority students, but lower accuracy rates for students whom had been retained in their grade levels.

Their second study showed that sixth grade teachers were less accurate in their judgments with minority students and those of lower socioeconomic levels. Also, the teachers were fairly accurate at identifying students that were considered "at risk" level. There appeared a gray area when the distinction of "at risk" became less identifiable. This second study revealed that overall sixth grade teachers had better accuracy rates of prediction. The researchers hypothesized the better accuracy rates were achieved because of the distinctive 'in the classroom' differences between the below average and achieving students. Additionally sixth grade teachers have more record information disposable to them.

Another hypothesis was that the sixth grade teachers may have more experience in evaluating this cumulative record information, because of placement decisions for grade seven. These researchers concluded that standardized achievement tests were not a source of reliable information regarding a student's

current performance. And if tests were more curriculum based, then teacher judgments would be more accurate.

Smey-Richman (1989), suggests this is not the case. She commented that teachers should be assessing their students using objectivity and on-going evaluations. The flaws with respect to her comments are the matter of any individual teacher being able to achieve an acceptable level of objectivity. As well as, today's classroom situations tend not to permit on-going evaluations because of class sizes, time management, and administrative costs. Her study, however, illustrates how differential treatment by teachers negatively affects behavior and learning.

In particular, expectations and treatment of students by teachers is especially powerful at the elementary school level and less powerful at the secondary and post-secondary levels. Secondary and post-secondary students tend to rely more on self-evaluation. Smey-Richman concludes that teacher expectations influence performance students for good performance and accept poor performances from students that are seen as low expectation students.

Dusek (1985), comments are consistent with the Smey-Richman and this researcher discusses some of the models of the expectations and communication processes. He elaborates regarding the influence of student-teacher actions that may change expectations including such behaviors as:

1. Seating low-expectation students far from the teacher and/or them in a group.

2. Paying less attention to low academic situations (smiling less often and maintaining less eye contact).

3. Calling on lows less often to answer classroom questions or to make public demonstrations.

4. Waiting less time for lows to answer questions.

5. Not staying with lows in failure situations (i.e.: providing fewer clues, asking fewer follow-up questions).

6. Criticizing lows more frequently than highs for incorrect public responses.

7. Praising lows with less accurate and less detailed feedback than highs.

8. Failing to provide lows with feedback about their responses as often as highs.

9. Demanding less work and effort form lows than from highs.

10. Interrupting performance of lows more frequently than highs.

Despite these teacher-student interactions being identified as 'consequences of outcome' influences; Good (1984) indicates that identifying students as high or low achievers does not necessarily result in student treatment differences.

In another study (Sharpley et al, 1993), adolescent self-ratings for Type A behavior patterns were compared for accuracy to teacher-rating of the same behavior. The data collected from both sources reflected little predictive power from the teacher's ratings to the adolescents' ratings. The correlation between adult raters agreement overall; that is parent, teacher, observers, and mental health workers, was .28. The

correlation coefficient among similar pairs of adults for agreement ratings, such as the parent group, was .60, and the correlation between children (6-11 years) and adult agreement ratings was .22.

Studies that found teacher-related judgments or ratings less than accurate have begun to investigate why this is the case. Kishor (1994) suggests teacher's judgments of students performances may differ to be less accurate based upon how they use performance information; and how other variables such as consensus or comparative information are used in evaluation strategies. Hoge (1984) also supports the belief that other variables are at play with respect to teacher expectancies. Hoge presents the problem that measuring teacher expectancies in terms of ranking students for achievement of academic potential with a uni-dimensional or uni-global index is too simple. Teacher expectancies should be measured using multi-dimensional indices in order to capture the different expectancy dimensions. He noted that these teacher ratings were more related to achievement than ratings of academic achievement.

Hoge also mentions Dusek and Joseph and their use of meta-analysis of the research of teacher expectancies. Their conclusions suggested that different dimensions of expectancies have different sources, and therefore a more analytic and complex approach is needed when examining the teacher expectancies.

In another paper, Hoge and Coaldarci (1989) state their research supports high levels of validity for the teacher-judgment measures.

Hoge and Butcher (1984) demonstrated a high level of accuracy of achievement judgments assessed against standardized reading achievement and IQ test scores. Teachers in this study tended not to be influenced by gender, but were influenced somewhat by their perceived ability levels of judgments of their students.

Other research literature contrasts with the findings of Hoge and Coldarci (1989). Eaves et al (1994b) found that teacher-related judgments for math skills correlated with tested math achievement. Yet, teacher judgments of reading achievements were not as strongly correlated with tested reading achievement. Hoge and Coldarci found a correlation of median r. = .72, but Eaves et al computed a correlation of median r. = .44.

In another study by Eaves et al (1994a), the researchers illustrated that the intelligence test they had chosen, the Slosson Full Range Intelligence Test, was the superior predictor for academic achievement for spelling and reading. Teacher judgments were superior for spelling achievement. Teacher judgments of reading achievement provided the best overall estimates for intelligence, reading, spelling, and total achievement. Despite the ability of the intelligence test to be somewhat a reliable predictor, the study concludes that in general teacher-related judgments offer moderately accurate estimates of academic achievement.

In reviewing the literature, the data seems to conclude that teacher-related judgments tend to be fairly accurate predictors of student achievement and academic

potential. There seems to be problems with how to assess teacher-related judgments and expectancies (White, 1990). These problems relate to defining variables used as constructs and methodological implications. As a consequence of some of these problems, there exists some discrepancy regarding what teachers may be able to accurately rate.

Teacher-related judgments appear to be more accurate in the analytic abilities domains such as math, but less accurate in the language skills area where answers may not be quite concrete. It appears that teachers may be more successful within an A + B = C scenario, than scenarios with ambiguity. One might argue that these discrepancies are occurring because teachers also have contrasting socio-cultural backgrounds, different levels of intellectual functioning and conceptualization, and various developmental attainments.

APPENDIX D: Chapter from RWN (Reconnecting with Nature)

Sensory Consciousness

How Nature Works: The Intelligence of Natural Senses

To disavow any natural sense is to play the role of an ignorant god.

Although life and death are two phases of the same process we sense them as opposites. We are alive; we prefer life because our life and all life is attracted to live. We know we are alive because we have a screen of consciousness. It acts like a movie screen in our mind. Our screen of consciousness has things appearing on it. For example, the words you are reading now are registering on your screen of consciousness. You are conscious of them, so you know you are alive. When there is nothing playing on the screen, or the screen itself disappears, we say we are unconscious or dead. We could truly say, “I am conscious of thoughts and feelings, therefore I know.” The screen of consciousness itself is one of 53 natural senses that we inherit. We sense consciousness. There are 52 additional natural senses that, when energized, register on the consciousness screen. Each sense is vital, a distinct way to know life and to be alive. Each exists in some form throughout nature.

Nature-Centered Consciousness

Human beings learn to survive as conscious beings. We train ourselves to know the world by what appears on our personal screen. Often we do not differentiate between the words and stories that appear on the screen and sensations and feelings that register there. For example, if we are in a movie theater that presents a frightening murder story, we register the story in our sense of consciousness and we feel frightened. It is as if a real murderer stalks us, even though we know it is just a story on the theater screen. Unless we reason that we should focus on the moment and bring into consciousness that a murder movie is just a story, the mental images that register have the same power to bring up sensations and feelings as does a firsthand experience. I demonstrate this phenomenon to my workshop participants by telling them I am going to get them to salivate by having them taste a lemon, slice the lemon into thin juicy pieces, and pass them around on a plate. Participants are to first smell their lemon slice, then taste it, and then squeeze it in their mouth and drink the sour juice. Before I ever get the lemon out, participants who have previously tasted a lemon ate already salivating just from my words (and so am I). Perhaps you are, too, if you have had past experiences with a lemon. This exemplifies how our story affects us in the same way that a direct experience does. The difference is that we usually cannot do

anything to change the past experience or movie/story itself.

However, we can choose to involve ourselves in a different story or experience at any given moment.

Sensory Unconsciousness

Reconnecting with Nature activities help people validate what they sense and feel in the immediate moment. Too often our sensations are not nurtured and our feelings escape our awareness. Our attention is wrangled away from what we immediately know and feel to stories we have been programmed to pay attention to. For example, as you read this paragraph, it is its words and phrases that catch your attention. You do not actually register the white space in the and between the letters, or the page itself. Perhaps now you do because I call them to your attention, but your reading habit will again shortly focus your attention on the words here. This domineering phenomenon makes the following question puzzle even scientists, educators, and psychologists when I present it to them:

“Like every other living thing, people are part of the water cycle. Water from the environment comes into us, through us, and out of us. What do you know that makes water do this? Also, what regulates the flow of water though us so that we do not bloat or explode from taking in too much water, or dehydrate from too much water leaving us?”

Most people feel they are not qualified to respond to the question. Those that do usually say things such as: “Water flow in people is determined by biologic osmotic pressures and salinity factors.” Sometimes they say: “Cell membrane qualities and homeostasis regulate water flow,” or “God made it so.”

Rarely does anyone mention that natural sensation of thirst is a contributing factor to having water flow through us, yet we each have known since childhood that thirst plays a role. Thirst is nature’s way of telling us to drink. Most of us are wrangled to depend upon knowing when to drink through our stories, our education. We do not drink when we are thirsty; we drink by mealtime or break time schedules, by the availability of water or flavors added to it. Like this page’s white space, we lose consciousness of what we naturally sense. In this case it is thirst, a natural sensation we have known since birth. In addition, most participants do not state that their sensation of thirst is also a water-regulation factor that prevents them from bloating or dehydrating. We learn to forget that thirst “magically” or “intelligently” subsides because it is naturally intelligent. It has the sense to recognize that our need for water has been satisfied, so it turns off the call for water. We are often more conscious of the language-based idea that the formula for water is H2O. Similarly, we disregard that our sensation of excretion is intelligent. It has the sense to tell us to return water to the environment. It is not that we do not feelingly know these things, it is that we learn not to pay attention to our old brain feelings.

What society wrangles our new brain to know about water as a chemical and scheduled resource becomes more important than what we innately know through our natural senses. It is as if our story about a lemon has replaced the importance of having a real one. But, the story of the lemon will not prevent the scurvy just as a picture of water will not prevent thirst. We cannot eat, drink, or prevent scurvy with our stories about water or a lemon; we need the real thing.

Our society's story mostly teaches conquest and improvement of nature, not sensitivity and respect for it. We learn to overlook the nature-connected wisdom of our many lifelong sensory ways of knowing, like the wisdom of thirst. We do not learn to honor the roles and properties of thirst in supporting our lives. In this way our nature-separated lives mislead us. We lose many possibilities for our lives to enjoy the natural intelligent relationships that pervade the biological world and sustain it in balance.

The sense of thirst exemplifies the properties and fate of each of our many other inherent natural senses. However, when we remove the invalidating names we give them and directly experience them as sensations, we discover that each sense is a distinct natural sensation unlike any other. Even though they have nature's cohesive ability to blend, the thirst is different than community, which differs from color, which differs from sound. On our screen of consciousness, each sense has the potential to register its self-governing, balancing contribution to personal and global life. Each sense will do so if our thinking allows it to appear in consciousness. We have educated

ourselves to mostly be conscious through new brain stories. We must teach our sense of reason to respect that each natural sense presents a feeling whose story is as important and real as the things it connects. The sensation of thirst is as important and real as water.

Nature-Connected Consciousness

Nature-reconnecting activities reverse our sensory omission. We learn from experience by doing them. They bring into our nature-deprived consciousness the importance of our inherent sensory ways of knowing. For example, the blind walk in activity 4, teaches participants how to temporarily turn off their story signals. Once these signals are quieted, participants become conscious of many other natural sensations, they learn to validate their existence by describing them. They not only feel these sensations, they learn to constantly call to them. They become aware in language of how good these senses feel in nature, and how this feeling replaces stress that they formally felt. They discover that, just like the sense of thirst makes sense and feels good when fulfilled, each of their other natural senses also make sense and provide good feelings when fulfilled. They discover that ordinarily their nature separation stories hold their attention and thereby deprive them of their common sense, their full spectrum of natural sensory intelligence, and food feeling. They discover from their personal life experiences how society teaches them to lose their respect and dependency on thirst and water for survival, and how it may be replaced by commercial products, like Coca-

Cola. They discover that they have become dependent on, or addicted to, nature replacements for survival and to obtain good feelings.

As I write this chapter, an e-mail has come from somebody in the United States doing the blind walk activity. I offer their letter here as an example of what happens in nature when we grow into using natural senses we usually ignore:

Hi Interact Group Friends:

I did this activity right after dinner and initially I was feeling a little reluctant to get out of my indoor “womb”. But the moment I stepped out into my backyard everything changed. This turned out to be a very powerful experience for me. I was led with my habitual senses turned off and I was surprised that the mere act of not speaking and closing my eyes changed my total perspective. Everything felt intensely sensual and I felt that my senses became keener. Sounds felt magnified. I heard the chirping of a mockingbird and the squawking of a crow. I sensed forms that I usually overlook. I balanced myself in different ways and felt the texture of the ground. I also wanted to pay more attention to the crackling of my feet walking over the ground cover. I felt motion, temperature changes, gravity, distance, and trust that usually escape me. I felt nurtured in a new way and a greater sense of place and community.

But the thing that struck me the most was the incredible diversity of the textures I experienced through touch. It’s like I never realized just how different everything felt, how many ways they could be sensed. When I was lead to the trees, I a strong affinity

as I touched them. Very strong feelings of life. I felt a strong kinship.

A very emotional loving experience for me. Tears came to my eyes.

Later, as the guide for another person, I felt like I wanted to give to my partner the same wonderful experience my partner had given to me. Here is an individual I've been close to for years and suddenly being in the same places sharing natural things that attracted me brought on wonderful new feelings and closeness for both of us.

The overall experience felt like we entered another friendly world, very focused, pure, and clear. I really enjoyed it.

Best wishes,

Ricky

Language-Addicted Consciousness

We innately feel/experience natural senses. These feelings are each unique and we give each of them a name. Too often we lose contact with the love and passions our natural sensitivities carry, because we have been taught to know these sensations as mechanical, misleading words such as "emotions," "needs," "drives," "instincts," and "subjectivity." However, no matter how we label or define them, nature created these distinct sensations and feelings. It also created our ability to register and store them and the wise nonverbal life experience messages they carry. We increase our ability to register and remember them by assigning them a name that revives them in consciousness. For example, "thirst" feels different than "instinct." The natural senses

and our ability to feelingly label them are part of nature and human nature. In addition to ourselves, most species, from minerals to mountain lions, own and react to these same sensitivities. Natural attraction sensitivities hold the world together and govern it. The world holds them in common while we have been wrangled to lose consciousness of them. Is it any wonder that we are insensitive to global community and its callings? It elicits responsible interactions from every other species.

Human consciousness is a registry of the same natural attractions. Those same attractions create and sustain relationships with atoms, minerals, plants, and animals. Our consciousness is naturally aware of the many senses that we feel, for it is one of them. However, our excessively language-trained consciousness often replaces direct sensitivity to other survival senses. This occurs to the point that our stories allow our consciousness to become conscious of itself. We mostly sense in and through language. The sense of reason organizes our words in our consciousness. We call this process thinking. We learn to think in words and images. We treasure and learn to culture and nurture our thinking, our story, about our consciousness screen and what appears on it. However this does not honor the senses themselves. We are educated to subdue and direct our senses rather than honor them. They are not words, they are sensations. Often they do not register on our word-addicted screen of consciousness.

Normally, the fulfillment of natural attraction sensitivities, organism to organism, builds and interconnects the natural world as a community. This is the loving wisdom of

Earth connecting and communicating (communing). Collectively, the interconnections blend, meld, and ecologically balance to sustain Earth and its diversity of minerals, species, and cultures. For this reason learning how to consciously enjoy, validate, trust, appreciate, and strengthen our natural senses holds great potential for personal and global fulfillment, balance, and unity . In nature-centered thinking, it is very important to honor natural sensory communication even though it is mostly nonverbal.

The evolving creation process of the natural world, not humanity, “invented” our natural senses. They originated as nature’s cohesiveness as nature’s ancient love of life diversifies. For example, an organism living in the sea has little need for sensing the equivalent of thirst. It does not need it because it is surrounded by a matrix of water, an essential of life. But if an organism evolves as a land animal, a natural survival attraction sense similar to thirst must simultaneously evolve to keep the organism connected to water. The organism’s life loves and needs water. Without the sensitivity or intelligence to know it needs water, the organism dies. In order to remain part of nature, and organism diversifies from the matrix must develop the appropriate natural attraction sensitivities to keep it connected to the matrix. These sensitivities make it part of the whole of life. They are essential of life.

Too often our story-based education fails to emphasize the importance of our natural senses. It overlooks that our many natural sensory loves bring onto our screen of consciousness the natural attractions that hold the world together. These attractions

keep all of life, including ourselves, alive. Our education wrangles us to lose awareness of our sensory connectedness and support from the global life community. How often we may feel abandoned when we actually are strongly supported by natural sensory connections that we have been educated to disregard. They are invisible to us, buried in our nonverbal subconscious.

Many reconnecting activities let Earth reconnect us and bring these various loves of life to our consciousness as appropriate words. Mark Germine, a psychiatrist and psychological journal editor, practices many kinds of therapies including hypnosis. With respect to using sensory nature-connecting activities, he says: “I have not seen such a deeply unconscious state brought to surface before.”

We may conclude that as any living organism physically separates from nature’s essentials, the life process genetically encodes that organisms with natural attraction sensitivities that keep it connected to those essentials. In fact, these natural sensory attractions form and sustain our genetic makeup. We experience this network of attraction connections through our many sensory anatomical, neurophysiological, and perceptual attributes.

As does everything else in nature, each natural sense and sensitivity plays a role in surviving. Each signals something special about our relationship with the natural world that exists in ourselves, each other, and the environment. That signal is part of life itself. The communication system of our planet consists of immediate, growing, ever-

branching network of differing connective attractions of, by, and from the creation force in nature. Each natural sense is intelligence in and of itself. It is wise to use this intelligence to build good relationships.

Nature does not know or use our language. In nature, natural senses and sensitivities have no name. Although we do not know how plants, animals, or minerals register natural senses and sensitivities, we do know that we feel them. We label our nameless natural feelings according to how they fit into our new brain stories. Depending on the story in which we are raised we call them: attractions, loves, sensations , affinities, spirit, resonance, invitations, callings, intuitions, god(s), great circle of life, communications, affections, blessings, bonds, higher power, natural wisdom, us, the nameless, and many other things. No matter what we call or label them, our natural senses and feelings are fact. They are attractions, loves as real, true, and provable as are rocks, water, and rainbows. They are as real feeling ourselves caress or pinch ourselves. To avoid the stories from desensitized authorities that often control these senses. I sometimes call the natural senses “nameless”. Nameless confronts word-addicted thinking with a reality of life it too often overlooks; nature consists of attraction relationship, not words.

We are normally born with our natural senses intact and healthy. Consciously or subconsciously they thrive until deadened. They constantly seek the pleasure of fulfillment from connecting with their origins in nature. In this way, they avoid the pain of

being thwarted, disconnected, or unfulfilled. The sensory wisdom of nature is that in people, the fulfillment of each natural sense produces comfortable, satisfying feelings that also benefit the whole of life. Non-fulfillment produces desires for fulfillment, for sensory satisfaction, for love.

Our natural senses and feelings are our multiple personality, our array of selves, and the true nature of our inner child. For us to responsibly enjoy life, each unadulterated natural sense requires our attention, trust, and nurturing. Each natural sense is a beautiful, nonverbal intelligence and love. Each natural sense has value for each makes its special contribution to stability, survival, and sanity. Industrial society has created many contrived stories that wrangle and amputate these senses from our consciousness and from nature's integrity. In natural areas, participation in the nature reconnecting process reverses this amputation and its adverse effects on personal, social, and environmental relationships.

The Multisensory Person

People may not inherently feel all of nature. We feel only the part that we exercise or that supports our evolutionary survival in the natural world. For example, our sense of sight does not ordinarily register infrared or ultraviolet light, although other creatures do not register it. Biologically the creation process may have evolved us to survive without seeing these ranges. Similarly, cats may survive seeing only blue and yellow, and many animals are color blind.

Each of the 53 natural survival sense groups that pervade nature and us are listed below. They help us enjoy and improve our lives. We experience them as an essence of our desire to be alive, as attractive callings that connect nature within us to the natural environment, to other people's inner nature, and to global life processes. Through our natural senses we more fully know nature within and about us. The more we awake, fulfill, and nurture them, the more we sense lasting fulfillment, the satisfaction, balance, and wisdom of nature's peace.

The list below contains general categories of senses. Each sense can be further subdivided for example, I list color as a single sense, yet we sense many thousands of colors. Each different color represents a different sensitivity, each may signal a different mood or message, each has different intensities that have different meanings, and each may have different neurophysiology and genetics. For example we consider taste as one sense, but our ability to taste salt, sweet, bitter, and sour are each physiologically , chemically , and anatomically unique. There are twenty-two different ways to experience touch. Each sense has a different genetic blueprint in us arising from eons of biological experiences and relationships within the global life community.

Most natural senses are present, but unexercised in an infant. Even the sense of reason and place operate in 2-month-old babies (Spelke, 1992). Since we did not invent natural senses, and cannot know them solely through language, each natural sense

mystifies our thinking. Albert Einstein said: “The most beautiful thing we can experience is the mysterious. It is the source of all true art and science.”

Between the years of 1961-1978, researcher Guy Murchie made an exhaustive study. He scrutinized scientific studies about the senses as they appeared in many hundreds of books and periodicals throughout seventeen years. In 1986 he told me that scientific methodology and research had actually identified more than eighty different biological senses that pervade the natural world. He said he additionally verified this through authorities at the Harvard Biological Laboratories. He clumped the senses together into thirty-one groups for literary convenience in his book The Seven Mysteries of Life published in 1978.

Although researchers such as Karen Gravelle, Arnold Gesell, Monique LePoncin, Joseph Chilton Pearce, Robert Rivlin, Rupert Sheldrake, Paul Sheppard, Elizabeth Spelke, and others continue to validate our multisensory nature, the full significance of it has yet to be recognized by industrial civilization’s story. Our new brain thinks that if it has a story about them then we are OK. Our addiction to our story mediated, nature-separated lives, and thinking keeps natural senses and their value hidden from our immediate awareness. Our economy fuels itself by keeping our senses discontent, further irritating them through advertising and then selling us products that satisfy them.

Our natural senses are nature in action. They attract us to the whole of the natural world and its ways, including the inner nature of other people. As our society

wrangles our new brain to conquer nature and the natural, we learn to conquer our natural senses. Our nature-disconnected sense of reason exalts the senses that our stories used to take over our other senses and the natural world. We subdue and demean the remaining forty-five natural senses that tell us about how the natural world works and enable us to participate in the process. Ignored and numbed, our natural senses are a vast missing part of a responsible story about Earth, community, and ourselves. Without them registering in consciousness we become “half vast.” As Carl Jung and others have noted, our abstract thinking is no more reasonable, logical, or consistent than are our feelings. Nature has taught me that our abstract thinking is the way we learn to put our natural senses into culturally reasonable stories. Our challenge is to recognize that the excessively nature separated parts of ourselves and our culture are unreasonable.

We desperately need nature’s wise ability to maintain life without producing our problems. That wisdom stops our society’s destructive actions against ourselves others and the environment. The absence of it from our consciousness is the mother of our collective madness, our runaway wars, pollution, dysfunction, disease, mental illness, apathy, abusiveness, and violence. Without nature-centered thinking, our consciousness abandons our natural sensory inner child. It disintegrates the creative passions that normally bring about community, balance, and positive change peacefully.

Anybody can choose to help reverse this destructive situation by choosing to learn and teach how to reconnect with nature.

I offer the following list of natural senses with this important reminder. Each sense is a distinct attraction energy, a love that in nature has no name. Each is aware of itself by its being, not by a name. Each is an experience. Each can awaken many natural parts of us when we use it to connect with the natural world in the environment and people. That touchy-feely, hands on, connecting experience, not this list, catalyzes personal wisdom, growth, and balance.

This list only provides information in language. It brings it on the consciousness screen and feeds and guides our senses of reason and language, our story way of knowing. However, without passion (apathy) reason and language are ineffective when it comes to enjoying responsible behavior, growth, and change. For example, even though cigarette labels and research show cigarettes to be harmful, many people smoke them. Reason and language are only 4 percent of our inherent means to know and love nature, life, and each other.

Nature-centered thinking uses the list of senses in conjunction with visiting natural areas and exposing our indoor conditioning to the many natural senses awakened in nature. It uses the names of the senses to help the new brain validate our natural sensations. Doing this is a reasonable sense once we experience a sense, speaking its name places that sensation in our verbal consciousness. There we can

think with it. This process nonverbally connects, rejuvenates, and educates us. It allows us to safely extend into the natural world's intelligence in order to more fully sense and make sense of our lives and all of life. It works because once we experience the process of love and wisdom, we own it. We never fully return to our former way of knowing.

Natural Senses and Sensitivities:

The Radiation Senses

1. Sense of light and sight, including polarized light.
2. Sense of seeing without eyes such as heliotropism or the sun sense of plants.
3. Sense of color
4. Sense of moods and identities attached to colors.
5. Sense of awareness of one's own visibility or invisibility and consequent camouflage.
6. Sensitivity to radiation other that visible light including radio waves, x-rays, etc.
7. Sense of temperature and temperature change.
8. Sense of season including ability to insulate, hibernate, and winter sleep.
9. Electromagnetic sense and polarity, which includes the ability to generate current (as in the nervous system and brain waves) or other energies.

The Feeling Senses

10. Hearing including resonance, vibration, sonar, and ultrasonic frequencies.
11. Awareness of pressure, particularly underground, underwater, and to wind and air.

12. Sensitivity to gravity.

13. The sense of excretion for waste elimination and protection from enemies

14. Feel, particularly touch on the skin.

15. Sense of weight, gravity, and balance.

16. Space or proximity sense.

17. Controls sense or awareness of effects of the rotation of the Earth.

18. Sense of motion, body movement sensations, and sense of mobility**.**

The Chemical Senses

19. Smell with and beyond the nose.

20. Taste with and beyond the tongue.

21. Appetite or hunger for food, water, and air.

22. Hunting, killing or food obtaining urges.

23. Humidity sense including thirst, evaporation control, and the acumen to find water or evade a flood.

24. Hormonal sense, as to pheromones and other chemical stimuli.

The Mental Senses

25. Pain, external and internal.

26. Mental or spiritual distress.

27. Sense of fear, dread of injury, death, or attack.

28. Procreative urges including sex awareness, courting, love, mating, raising young.

29. Sense of play, sport, humor, pleasure, and laughter.

30. Sense of physical place, navigation senses including detailed awareness of land and seascapes, of the positions of the sun, moon, and stars.

31. Sense of time.

32. Sense of electromagnetic fields.

33. Sense of weather changes.

34. Sense of emotional place, of community, belonging, support, trust, and thankfulness.

35. Sense of self, including friendship, companionship, belonging, and power.

36. Domineering and territorial sense.

37. Colonizing sense including receptive awareness of one's fellow creatures, sometimes to the degree of being absorbed into a super organism.

38. Horticultural sense and the ability to cultivate crops as is done by ants that grow fungus, by fungus who farm algae, or birds that leave food to attract their prey.

39. Language and articulation sense, used to express feelings and convey information in every medium from the bees' dance to human literature.

40. Sense of humility, appreciation, and ethics.

41. Sense of form and design.

42. Reasoning, including memory and the capacity for logic and science.

43. Sense of mind and consciousness.

44. Intuition or subconscious deduction.

45. Aesthetic sense, including creativity and appreciation of beauty, music, literature, form, design, and drama.

46. Psychic capacity such as foreknowledge, clairvoyance, clairaudience, psychokinesis, astral projection, and possibly certain animal instincts and plant sensitivities.

47. Sense of biological and astral time, awareness of past, present, and future events.

48. The capacity to hypnotize other creatures.

49. Relaxation and sleep including dreaming, meditation, and brain wave awareness.

50. Sense of pupation including cocoon building and metamorphosis.

51. Sense of excessive stress and capitulation.

52. Sense of survival by joining a more established organism.

53. Spiritual sense, including conscience, capacity for sublime love, ecstasy, a sense of sin, profound sorrow, and sacrifice.

This list explains how, sense-by-sense, nature connects with itself in us, through us, and to people and places around us. It suggests that we can consciously engage in this process. It validates Dr. David Viscott's proposal that feelings are the truth, and that we do not live in the real world when we ignore what are feeling. Our nature-separated lives disengage and de-energize these senses. These chapters and activities suggest that it is reasonable to learn to think and rebuild relationships through all of our 53

natural senses, the mother of these senses and feelings, to nurture
and strengthen them, o rejuvenate them to normal. The process gives them enough energy to appear on our nature-desensitized screen of consciousness and green our thinking.

APPENDIX E: 12 Nature Activities by Cohen that Let Nature Teach Us

Experience the Best Teacher-Nature

Activity 1

A Chapter of Your Life

This book builds on your attraction experiences in nature. It enables you to obtain their benefits at will. I encourage you to start the process by writing your own chapter here. To the best of your ability, below or elsewhere, write a paragraph or two about the most attractive experience you can remember having in nature. It may have taken place while you were alone or with others, in a park, your backyard, or a wild area. It could have been with a pet, an animal, plant, or rock.

If you think you have never had a good experience with nature, write a paragraph about why you think you would like to have one.

Once you have completed writing the paragraph about your attractive nature experience, answer the following questions about them.

1. What sensations made the experience attractive, enjoyable, or rewarding?
2. Were you taught to have the worthwhile sensations in your nature experience in a class? From a book? Was it not your inborn, natural sensory attractions to the natural area that provided the enjoyment and rewards?

We are biologically constructed to sense natural attractions. Your most attractive experience in nature consisted of many distinct, different sensations such as temperature, color, and touch. Hunting and gathering societies, find that following their natural sensory attractions in people and the environment is a key to survival in balance. We each inherit this ability.

Find this ability in yourself by going to an attractive natural area such as a park, backyard, beach, or potted plant. Note that some aspect of this area calls to a sensory part of you that appreciated it. This is a natural-attraction connection between you and this natural area. You naturally sense it, it is a love that is alive and well in you. The sensory attraction invites and welcomes you to be there, it feelingly encourages you to enjoy this moment. On a sensation-feeling level, it gives you permission to be here

Now use your sense of language to further validate that attraction experience by putting it into words. Write a statement that says to the effect “I know that my inherent sensitivities to natural attractions are alive and well because when I visited this attractive natural area, I could enjoyably sense and feel _____.” Include what you sensed: colors, forms, shapes, textures, pressures, temperatures, fun, motion, emotions, etc. Note that you can have these same sensations and feelings about people. Although they exist without verbal language, they are a form of connectedness shared throughout.

The Thinking Revolution

Activity 2

Partnering With Nature: A Discovery Experience

Go to something in nature that you like, that you find attractive. A park, backyard, aquarium, or potted plant will do. When you get to it, notice how you feel.

Now, treat this area fairly, with respect, as an equal or friend. Do not bully it, instead gain its consent for you to visit and enjoy it. Ask this natural area for its permission for you to be there. Doing this increases your sensitivity to the area. Ask it if it will help you learn from it. It will not give consent if you are going to injure, destroy, or defame it, or it you. Wait for about half a minute. Look for adverse signals of danger such as thorns, bees, cliff faces, etc. If the area still feels attractive, or becomes more attractive, you have gained its consent. If this portion of the natural area you visit no longer feels attractive, simply select another natural part that attracts you and repeat this process. Do this until you find an area where a safe attraction remains.

Once you have gained the area's consent, compare how you feel about being there now with how you felt about it when you first arrived. Has any change occurred?

Below are some reactions of past participants to this activity. Add your reaction(s) to the list and share them with others.

“It was hot. Soon after I asked for permission to be with the grove of young trees, a gentle, refreshing breeze came through them. It cooled me, and the trees waved their leaves at me. It felt good, like the grove smiled its consent.”

“I was attracted to the sound of a raven on the rocks ahead. I stopped and sought its consent for me to enjoy its presence. It began to come closer and closer, increasing my fun and excitement. That was unforgettable.”

Write down important things you learned from this activity. Write down what good feelings you may have experienced by doing this activity.

Reconnection with Nature

Activity 3

Sensory Intelligence, Information, and Powers

Do our natural senses and their intelligence deserve our trust? Do they have powers that we use to the fullest advantage?

1. Have in your possession a pencil. Go to a natural area. As you did in the previous activities, ask for this natural area's permission for you to become involved with it. Gain its' consent to help you with this activity.
2. Place six or more similarly sized sticks or rocks before you.
3. Shut your eyes and then pick up one stick.
4. With your eyes remaining closed, mark the selected stick with your pencil. Then feel the stick all over until you feel confident that you have familiarized yourself with its shape, texture, and other attributes.
5. With your eyes still shut, return the stick to the pile. Mix up the pile of sticks. Now pick them up one at a time and feel them until you believe you have found the stick you selected and marked.
6. Now open your eyes and note if you have selected the stick you marked. Try this a few times.
7. What conclusions can you draw about your sense of touch?

This activity demonstrates the many facets, powers, and connections of a single natural sensory intelligence: touch. Each of our 53 other senses have similar powers. They make similar contributions to our ability to intelligently know and feel alive.

You can do a variation of this activity in a safe woodland, After getting the area's permission to visit, shut your eyes, and have a friend, without speaking, lead you to one tree in the area. As with the sticks, spend as much time as you need getting to know this tree with your eyes closed. Then have your friend lead you away from the tree. Now open your eyes, go back into the woodland, and see if you can find the same tree. Your friend can tell you if you are right and, of course, so will the tree if you "make sense" with it by sensing it.

Write down the three most important things you learned from this activity. Write down what, if any, good feelings were brought on by doing this activity. Can you describe them? Does this activity enhance your sense of self-worth?

Reconnection with Nature

Activity 4

Learning From Sensory Nature Connecting

Go to an attractive natural area. As you did in the previous activities, ask for the natural area's permission for you to become involved with it. Gain its consent to help you with this activity.

The words psyche and spirit are ancient names for air. Green plants naturally produce oxygen, the part of air we breathe that sustains our lives. Air is a product of nature. So is our sensory desire to breathe. We call the process respiration, meaning re-spiriting.

Approach a green plant in this area and have your conscious mind tell yourself to "stop breathing." Then actually stop breathing as your verbal command has requested. This disconnects an important part of you from nature. Notice the disruptive natural feeling of suffocation that comes into play and intelligently asks you to reconnect by breathing again. That feeling or sensation is one of your 53 natural senses in action. It is making sense.

Only allow yourself to start breathing again by holding onto, or embracing, part of the plant because it produces the oxygen you need for survival. This lets your natural senses feelingly bring to your new brain an awareness that the plant supports you. Notice the rewarding natural feeling that comes into play when you breathe again. It

comes from fulfillment of your natural sense of respiration. Release the plant, stop breathing again for as long as you want, and repeat the whole process. Do this for fifteen minutes or more. Note what changes, if any, occur from doing this activity. What happens if you do this activity, but hold an artifact like an air freshener, deodorant, or air-conditioner instead of a plant? Does holding them feel the same as holding the plant? Does the word respiration have different meaning now?

Recognize that each time you exhale, the carbon dioxide in your breath feeds the green part of the plant.

Write down the three most important things you learned from this activity. Write down what good feelings/sensations were brought on when you held the plant and resumed breathing. How would you feel about giving up the ability to have those feelings? Does this activity enhance your sense of self-worth?

Replenishing Earth and its' People: The RWN Factor

Activity 5

Unity with Nature

Part One:

Let nature help you discover the unity and community you share. Go to an attractive natural area. As you did in the previous activities, ask for the natural area's permission for you to visit and become involved with it. Gain its consent to help you with this activity.

For one minute, simply walk through that natural community. For the next minute, continue to walk through it while repeating the word unity. Think about the many interrelationships of the community that surrounds you. Repeat this process for ten minutes. See what differences, if any, you observe when you say "unity" than when you do not say it.

Write down the three most important things you learned from this activity. Write down what, if any, good feelings were brought on by doing this activity. Can you describe them?

Part Two:

Think about a person you most respect or love.

What qualities do they have that make them attractive to you? Is this person abnormal or do most people have these attractive natural qualities somewhere within them?

If you appreciate these qualities, it means that part of you is sensitive to and aware of them. The part is that quality in you that you were born with. It is part of your nature that, un nurtured, has not yet fully expressed itself. Chances are, that quality is naturally found in most people and throughout nature. Our nature-disconnected society seldom nurtures it effectively. Note that these attraction qualities are also found in other species, they are not ours alone. They are the natural qualities, held in common, that sustain the Earth Community. They are the “unity” in global community.

Write down the three most important things you learned from this activity. How would you feel about giving up the ability to have those feelings or have the ability to feel them taken away? Does this activity enhance your sense of self-worth?

Reconnection with Nature

Activity 6

Separation from Nature

Industrial society lives by a story that guides us to separate from nature and our natural senses. Discover the effects of this story. Go to an attractive natural area. As you did in the previous activities, ask for the natural area's permission for you to become involved with it. Gain its consent to help you with this activity.

Wrap a towel or sweater around one of your hands. Now shut your eyes. With your eyes closed, carefully, gently feel natural things in the immediate area with both your wrapped and unwrapped hand. Repeat this procedure with your eyes open.

Write what you sense, think, and feel from this experience. Try to make sense of it. This activity asks your new brain to consciously experience sensory disconnection from nature.

Some past participants' reactions may be of help. The last one is especially significant:

"The covered hand was warmer and more protected, but it seldom felt the outside world and it wanted to. It was frustrated. It sensed things differently than did the bare hand. It was comparatively numb and uninteresting."

“The wrapped hand saddened me, but thinking about what having to wear the wrapping meant in terms of my natural attractions, my overprotected, indoor childhood frustrated me. I got angry.”

“Nothing is anybody’s fault. Our society’s stories threaten our inner child when they tell us to wear the wrapping or be abandoned.”

“The damn wrapping is a lie that we’re forced to learn. The thicker the wrapping, the less I could sense or make sense.”

“This activity helps me see how sensory numbness results from a person living excessively indoors. It explains how people can become insensitive. I had to bang on things in order to feel them with the covered hand. My insensitivity changed my impact, how I felt I had to relate.”

Write down the three most important things you learned from this activity. Write down what good feelings were brought on by doing this activity. If it taught you something worthwhile, does that feel good? Can you describe the feeling? How would you feel about giving up the ability to have that feeling or have that ability taken away? Does this activity enhance your natural sense of self-worth?

Reconnecting With Nature

Activity 7

Discovering Our Natural Self

This is a two-part reconnecting activity you can do to help your new brain validate your connections to the global life community in and around you.

Part One:

Go to an attractive plant, animal, mineral, or place in a natural area. Try not to wrangle it. Ask for its permission to become involved with it. Gain its consent to help you with this activity. Do the following activity once you are sure the natural thing you selected continues to give you some sort of comfortable, attractive feeling. Be sure that you like this natural attraction.

Write down what you like and why. This may be as simple as: The plant, animal, mineral, place, or thing in this natural area that I like is (1)_____.

I like it because (2)_____. (Complete this sentence fully. State why you like the natural thing you chose and entered in (1). This is a NIAL centered statement.

Part Two:

Place the phrase “I like myself because” in front of your why or “I like it because” sentence that you just wrote in part one. Now read aloud the sentence including the new prefix: “I like myself because” (2). Read it to others, if possible. How does the

whole sentence feel? Does it describe part of you? For example: “I like the tree because it is beautiful and strong”, becomes “I like myself because I am beautiful and strong”.

You are nature. This revised sentence “tricks” your language and reason to become conscious of your inner nature. Can you validate that the changed sentence: “I like myself because (2)” describes some aspect of yourself, your inner child, or your nature? How do you feel about yourself in this light? Does it feel right?

If reading the sentence makes you feel uncomfortable, search your life for one incident or example of it that feels right or accurate. If necessary, ask a friend to help you find this part of yourself. Your sentence may be a metaphor. Try to find examples of parts of yourself that accurately match this metaphor. Sometimes you have been wrangled to deny them. Many people have trouble admitting they are beautiful or strong. Additional activities in these chapters will help you reconnect these parts of you with nature and let nature nurture them so that they feel comfortable to you. This makes you more immune to desensitized people, and they more respectful of you.

Write down the three most important things you learned from this activity. What effect does this activity have on your sense of self-worth?

Educating and Counseling With Nature: The Greening of Psychotherapy

Activity 8

Natural Old Brain Connecting

Discover and strengthen your non-languaged sensory inner nature. Go to a real natural area. Ask for its' permission for you to become involved with it. Gain its consent to help you with this activity.

Without using language, try to connect your nonverbal, sensory inner nature with the non-languaged natural world. Seek the nurturing "mother" community where your natural sensory faculties originated, evolved, and feel at home. Reconnect your old brain to nature by simply sensing natural attractions in this natural area (colors, moods, loves, textures, motions, forms, variations, touch, taste, smells , sounds, atmospheres, contrasts, etc.), without assigning words or ideas to them. This is nonverbal connection, similar to how the natural world knows itself. It is a challenge. If your new brain, against your will, wrangles your consciousness to habitually or addictively drift to thoughts, stories, or to labeling the natural area, tie it up from so by repeating the word non-language or nameless. Note whether that makes a difference. Experiment; try to find a word that works best for you. Sometimes it is helpful just to forcefully tell your sense of language to be quiet. These procedures allow your non-language awareness to exist in the moment. You sense more completely in the moment. Thank your non-languaged old

brain for that faculty. Moving through the area without concentrating on any one thing also helps you make nonverbal contact.

Some participants' reactions include:

"I felt detached and free, almost like I was walking in a dream."

"Everything became more intense, I felt more connected."

"Suddenly I could hear sounds that had been there all along, but which I had ignored."

"It felt like jumping in a lake, I felt my surroundings, I floated in them."

Write down the three most important things you learned from this activity. Write three green in green statements that come from doing this activity. What effect does this activity have on your sense of self-worth?

The Psychology of Nature Negatives

Activity 9

Natural Attractions Feel Good

Learn how to let nature's wisdom reverse your disconnection and discontent. Go to an attractive natural area. Ask for its permission to become involved with it, gain its consent to help you with this activity.

If the area remains attractive, repeat activities 10, 11, and 12 by knowing this natural area nonverbally, then as a connection and attraction. Now make the following addition: Notice that each time you sense a natural attraction it feels comfortable (enjoyable, good, nice, fun, beautiful, supportive, etc.). Thank it for giving you this priceless sensory gift. Validate this biologic experience and your sensory self by putting it into reasonable (new brain) words such as: "I am a person who enjoys sensing natural attractions," or "natural attractions make me feel good." Recognize that this validation is G/G. In the new brain it produces a reasonable verbal consciousness of enjoyable natural sensations and feelings. Some participant's reactions:

"Until now, I never even thought about my good feelings being an invention of, by, and from nature. I just took them for granted."

"In nature, how I feel is just like a traffic light saying stop or go."

“I’ve always thought these kinds of feelings in nature were a spiritual thing, perhaps they are.”

“Thanking my attractions made me feel part of the area, I participated in it.”

“When I put the experience into words, I felt it more strongly.”

“Validating gave my natural self some self-esteem. I did not have to feel like a trained cultural object to feel OK.”

“At the time, I didn’t know I was in stress, but I thanked my good feelings for being and I felt relief from something.”

“I felt a flow of energy in me; it just crawled up my back and into my head.”

Write down the three most important things you learned from this activity. Write three green in green statements that come from doing this activity. What effect does this activity have on your sense of self-worth?

The Natural History of Personality

Activity 10

Express Appreciation

Nothing in nature is a one-way relationship. As when we breathe, everything in the global life community constantly gives as well as receives. To participate in this process, you give by expressing appreciation to each thing that has given you something. Go to an attractive natural area. Ask for its permission to become involved with it, gain its consent to help with this activity.

If the area remains attractive, thank it for giving you permission. Did thanking it make a difference? Find a natural attraction there. Now thank the natural thing that attracted you. Thank it for being there for you, for consenting to enrich your moments, and for being attractive. Thank your natural sense of language for helping you more fully connect. Thank your sense of reasoning for sensing this appreciation activity as a reasonable thing to do. Thank it for sensing that it is reasonable to feel and express thanks. Thank your natural senses for supportively being there for you. Thank nature for having invented comfortable feelings that lead you in good directions.

Do you feel different when you include expressing your appreciation? Conscientiously asking permission and giving thanks for natural gifts is a good way to sensitize your new brain to things it might ordinarily overlook. It helps open up the new

brain to the natural world in people and places. Nature works by both giving and receiving to sustain itself. Some participants' reactions:

"It surprised me to see how thanking my senses and nature increased how good my attractions felt."

"Saying 'thank you' shifted the activity into a whole new frame of reference for me."

"I never thanked a sensation before, but it feels right. For example, when I said 'thank you' to the sensations, I had in that lovely bower of trees, my sense of community applauded my sensation of place for being there for me."

"Having to say 'thank you' made me realize that I actually do feel thankful for the gifts nature provides. I usually overlook that feeling."

"When I said 'thank you', I was filled with a warm feelings that was not there before."

"Expressing appreciation intensified the activity for me, it was quite different."

Write down the three most important things you learned from doing this activity. Write three green in green statements that come from doing this activity. What effect does this activity have on your self-worth?

An RWN Activist Speaks His Peace

Activity 11

Respecting Natural Attractions

Go to an attractive natural area. Ask for its permission to become involved with it, gain its consent to help you with this activity. If the area remains attractive, thank it, and go to a few objects or aspects of nature one at a time. For one minute, take hold of each object and pull on it, but do not remove it from the attraction relationships and attachments it presently enjoys. Be sure to leave it as you found it. Note what thoughts and feelings come to mind during the minute you are in this balanced relationship with each of the natural objects. Some participants' reactions include:

"I felt the seaweed was pulling back, yet it was signaling how forceful I should be in order to have both of us survive. I felt like it was in charge."

"The dandelion told me it wanted to stay where it is."

"I felt the blade of grass drawing me into itself and Earth."

"I disconnected the twig accidentally and felt sad."

"This was a real challenge to do with water. Some of it wanted to be with me so my hand stayed wet."

"My hands felt like they melted and streamed into mixing with the flower. My body started to join them. I fantasized we were some natural thing dancing by itself."

Write down the three most important things you learned from this activity. Write three green in green statements that come from doing this activity. What effect does this activity have on your sense of self-worth?

Activity 12

Letting Earth Teach

I'm sleeping indoors again. The stuffy dead air makes me long for the damp fragrance of the woods. Hooting owls and the embracing lullaby of a breeze.

One of my students complained, "Whenever I mention to my family or friends that our upbringing teaches us to wage war against NIAL, they get annoyed with me. What can I do?" Eight weeks later, I risked responding to her question. It was the last week of school. We had now camped-out, lived and learned together across the U.S.A. for over 200 days and nights. We had now created the most peaceful and supportive living situation we had ever known. We were very close and nobody really wanted to leave.

During that last week, while visiting the spectacular Great and Dunes of Colorado, I suggested that we play "Capture the Flag." It is an exciting physical game with warlike qualities such as acting like wranglers and physically capturing people, freeing prisoners, invading other's territories, being deceptive and stealing the enemy's flag in order to win. I said it could be a fun learning experience. After some discussion, we all consented to play and we divided ourselves into two competing teams.

Within an hour, some people were at each other's throats about how harshly others played, how they cheated, being too aggressive, making it more than a game, making winning more important than being careful or compassionate with others, getting out of control, losing sight of the rights of others, intentionally aggravating, misleading,

and manipulating people, treating people as game objects rather than respecting them as human beings. We had fallen victim to the story of the game, it had taken over.

By consenting to play “Capture the Flag,” we placed ourselves in competitive, aggressive postures that were conceived by, and mimicked the wrangler-driven aspects of our lives at home, school, work and play. In an hour’s time, the game’s atmosphere began to disintegrate us. One person wanted to stop playing and called a meeting. By consensus, we stopped the game and discussed what had happened.

The game’s competitiveness triggered an outpouring of hurtful memories from our wrangled home life. We became aware of how vulnerable we were to concepts and rules that divided us and placed us in warlike postures with each other and the natural world. If it could happen to us here, it could and did happen to anybody. In a normal childhood lifetime, it could and did wreak havoc.

We decided that if we were to avoid the dangers and destructive effects of conquest, whenever possible it was best to change or limit participating in situations or institutions that encouraged it. To learn how to do that was the purpose of our school. We noted, with great regret, that although we had learned something useful by playing the game, its competitive spirit has disconnected us, and the goodness in each of the silent sand dunes, the spectacular Colorado Rockies that surrounded us, and the goodness in each other that we had so carefully cultured during the year. Although the

game helped us see a source of our problems, it took us time to recover from it. Fortunately, anybody at any time could call a meeting.

I felt relieved when, on the last day of school, the group decided that what learned from playing “Capture the Flag” was worthwhile and worth repeating. With respect to constructive ways of having fun, we are given two ears so the command to play games like this can go in one and out the other. When problems arise, such as being ridiculed for thinking we learn war against NIAL, or that we don’t register at least 53 natural sensations, use this activity to help deal with them:

Earth as Teacher:

1. If you can, think about a real problem or question that you have about some aspect of life or your life. If no question arises, use the generic question: “What would you like to teach me?”
2. Thankfully gain permission from an attractive natural area to visit it and help you do this activity.
3. Using the same permission process, ask attractions in this area, one after the other if necessary, if they will consent to be your teacher. When one consents, thank it for befriending you.
4. With your eyes closed and then open, sense as many attractions as you can that are part of this attraction. For example, the color motion, temperature, form, texture etc. of a rock, (or tree, or pond, etc.).

5. Make ample physical contact with the rock. Touch it with your hands and feet if possible. Keep your eyes on it.

6. Sense the essence of the rock. What one sensation resonates as being it?

7. Give that essence a name such as: Rock Mortal, Rock Being, Rocking or Now.

8. Ask this essence, by name, the question you have. If you have no question, ask it what it would like to teach you i.e. “Rockness, what would you like to teach me?”

9. Wait for a response to appear in words or images. Say the response aloud. Write it down. Thank the essence for sharing this response with you.

10. Now imagine stepping into the essence of this natural attraction and becoming it. You are Rockness.

11. As this essence, picture yourself as you were when you asked it the question in 6. Tell that image of yourself the answer you gave in 9. Then tell that same response to yourself as you know yourself at this moment.

12. As this essence, thank yourself for honoring you by seeking you and trusting you to respond to the question.

13. Return to being yourself here and now.

14. Thank this attraction for being, for participating in your life and for teaching you.

15. Write the response of the essence down and read it after sleeping on it for one night, and then again 10 hours later.

16. If you want additional knowledge about the response you received, with it in mind, do the SEVMRATC series, or parts of it that are attractive at that time. Then repeat this activity.

17. Repeat this activity with the inner nature of person who you feel could teach you something you want to know.

APPENDIX F: Cohen's Instructions for learning and teaching the NAE Process

PART ONE: Orientation for using Educating, Counseling and Healing with Nature (ECHN) activities.

A. In a Project NatureConnect book about ECHN, read the rationale of the NAE activity you are about to do. Become aware of what disconnection from the flowing, restorative river of nature attractions the activity is designed to help you address. This information enables you to see that it is reasonable to use the activity to make conscious, sensory contact with immediate attractions in the flow of nature's river, in and around you.

B. Go to a safe natural area that reasonably feels attractive in this moment, backyard or backcountry. Go to an attraction that is registering in you from this area now, not from some past or future idea, memory, explanation or experience with nature. They are media; NOW is the river. In the Now is when nature intelligently speaks attraction. For example, if your body needs water, you experience thirst. When you visit a natural area you will, no doubt, sense an attraction to water. However, at times a greater attraction may call for fulfillment first.

"This is like taking a Rorschach Test or a TAT with Mary Poppins. But we do it in a natural area, the real thing, instead of with ink blots or photographs. In addition, in nature's presence this test also becomes a remedy."

Anonymous NAE Participant

Reminder: an unsafe natural area is not reasonably attractive. It is not reasonable to be unsafe.

C. Obtain consent from this natural area to visit it and do an activity with it. Painstakingly follow the attraction-consent activity guidelines. Remember that to make a contribution, attraction relationships, to be attractive, must obtain consent from all parties in the relationship. This includes consent/consensus from plants animals and minerals, the wind and things like starlight.

D. Help your sense of reason recognize why it makes sense to become aware of and express the natural attractions that your natural senses are registering while in this natural area. Validate that you are making unadulterated contact with the alive planetary attraction river that you live in, with the global life community that cooperatively and supportively enjoys being the river with you.

E. Pay attention to senses, feelings, thoughts, memories, attractions and anything else that becomes conscious while your psyche is in this supportively connected relationship with the river. Note what may be attractive about the experience. How does it feel? What value does it have for you? What does it help you discover? Does it disconnect you from illegitimate authorities in your daily life? What negative stories might you hold about it? How would you feel if you were denied the ability to have this relationship?

F. Be aware that A-E completes the first third of the activity. The value and contribution of the activity will not occur unless you complete it by doing the remainder of it that is described in Part Two, and Part Three, below.

PART TWO: Nature-Connected Literacy

G. Bring your "Old Brain" sensory attraction contact with nature, in E, above, into your literate "New Brain" linguistic powers of thinking and knowing. Accomplish this by writing an email to your study group Orientation Course members, an email that conveys the truth of what happened in E., what it brought to mind, how the visit may have been beneficial to you and/or the natural area. Include in this email your responses to the Twelve Interaction Catalysts in the Web of Life Imperative book (page 50). They help you heighten your critical thinking and self-awareness with respect to your biological and spiritual origins and relationships. You get to know yourself as a citizen of nature's flowing river attraction community. (G. may also be accomplished in real life, local, study group meetings.)

H. Read and respond to emails that you receive from your study group that express what they thought was attractive and valuable about the email they received from you, what they learned from it, what they shared with it. Do the same for them with regard to the emails they send you that describe their thoughts, feelings and experiences in "E." Discover how speaking from nature can reach others and build or improve relationships.

PART THREE.

I. Sleep on this activity one or more nights before you start engaging in an additional activity. Major changes occur while you sleep and dream as your sensory and story brain attractions amalgamate with each other so your psyche comes into greater balance with the whole of life and its supportive ways.

J. Match your reactions to this activity with those of other people who have done it, or who have done other activities. Write out and add your own unique reaction to it. Remember that you can use this activity again and can teach it to others, so they may benefit from it.

Sample Reactions:

"I stood today about 30 seconds of sensing these plants in silence and respect. I became aware of the other parts of nature that surrounded them in the distance. The sun, tall trees, beautiful plants in bloom, birds singing everywhere. Wow, this place is magical!!!! This moment reminded me how much brighter the world and we can be when we focus on nature's attractive beauty. I felt blessed and balanced, As I left the garden, gratitude emerged from every cell in my body."

Anonymous NAE Participant

"One of the major ways this course has contributed is its wisdom about how I might deal with the persistent depression my aged mother suffers from. She had been placed on drugs for a very long time before now but each time she withdraws from the drugs, the

depression relapses. Since I started the ECO 501 Project NatureConnect course, I stopped her from taking any drugs and engaged her in some of my activities in reconnecting with our source in nature. She gradually began to see the beauties and perfections of nature and her therapeutic healing effects. She found friends in nature and most times I see her either tending the flowers, or reconnecting with the trees around my house. She used to be a lonely woman but she realized that life is worth living when connected with nature through NAE activities. She now understands the synergy of relationship between humanity and nature."

-Anonymous NAE Participant

"In my journal I wrote: 'The sun is my soul.' I don't think I felt this before doing the activity. It is in writing it this way, to myself and you, that it touches me. I sense a recognition of something truthful inside me which makes me cry."

- Anonymous NAE Participant

Why the NAE Process is Effective

Simply stated, the NAE activity process of A-J works because it enables us to, at will, remove our psyche from the stagnant lake where we are usually born and raised, and re-connect our psyche to the grace of its self-correcting origins, the purifying and flowing, "now" attraction river community in a natural area, backyard or backcountry.

It is only in the now, the immediate moment, that our senses and memories come into play, that nature exists, and that we can think and act. For this reason, nature's full and empirical truth only exists in the "now."

Most non-now "facts" are stagnant lake stories of the past and future. They are usually theoretical, nature-disconnected abstracts of reality, not the real thing. The effects of time and nature-removed persuasions often adulterate them.

The unique scientific story that the process of NAE offers guides us, in the now, to do nature connection activities. We learn to own the means to, at will, connect and responsibly nurture and fulfill our Old Brain and its inborn natural sensory attractions to nature's balanced ways and wisdom.

As we do nature-connection activities, nature's renewing and regenerative powers produce new, reasonable, health enhancing sensory paths in our psyche.

After doing an activity, when we sleep, our New Brain and its stories are also asleep. Asleep, it can't block our activity-energized, newly revived Old Brain sensory attraction way of expressing itself and knowing the world. These Old Brain sensations, feelings and intelligences follow their attraction to creep up and re-bind with new paths in the New Brain, experiential paths that were formed by doing a nature-connecting activity. This is nature's attractive way. Similar attractions restore a bull dozed forest to its most contributive adult form.

We awaken with a feeling of greater fulfillment and a stronger sense of natural self. We comfortably feel less dependent on obtaining fulfillment from questionable beliefs and relationships. In time, our sense of reason is conscious that, through sensory nature-connection activities, we can gain fulfillment and restoration without detrimental side effects from contemporary chemicals, technologies or dogma. We feel new confidence because we own a tool that gives us the power to deal with destructive childhood incidents and indoctrination that have plagued us and produced disorders. We feel more involved, less apathetic.

Embracing natural attractions often replaces or complements prescribed drugs. It strengthens holistic healing techniques. This results because when help our literate-story way of knowing register our sensory way of knowing in connection with authentic nature and its powers we make nature whole in our psyche. Our mentality incorporates both our sensory and story way of thinking and feeling. It is whole and whenever nature is whole, it proceeds to do what it does best: nurture, recycle, renew its integrity. Just as nature can take a bulldozed or contaminated forest and restore it to its healthiest state, when whole in our psyche, nature does the same thing with our injured or contaminated thoughts and feelings.

The rewarding growth and healing of our psyche through NAE enables us to think more critically as well as helps us release our bonds to our destructive ways. They become rewarded and transform into more sensible relationship building. We recognize that the

flow of the river is rewarding and that it provides us with an ever-present life raft of reasonable sensory fulfillment. This realization helps us make further contact with the river and better cope with the lake stagnation that has deteriorated our personal, social and environmental well-being.

Our self-worth and esteem increase as we are enabled by NAE because we own and can obtain further benefits by repeating familiar river-connection activities at will. In addition, we can also teach the activities to others so they may benefit from them.

Is it surprising to learn that we get the most out of nature-connection activities by teaching them to others? However, like a parent and child, isn't this caring process the "mothering" way Mother Nature works to sustain and promote her perfection?

Summary: using and teaching NAE activities makes nature present in both our New Brain and our Old Brain way of thinking and feeling. Our psyche and nature become whole by consciously sharing the transformative powers of the river. Nature and we benefit because whenever and wherever nature is whole, it recycles, heals, unifies and brings things into balance. That is nature's delight.

Conclusion

The NAE process of educating, counseling and healing with nature is a transformative, sensory science that, through natural attractions in natural areas, helps us connect our thoughts and feelings with the renewing wisdom and joy of nature and its eons on this planet, now. It helps us learn how to think like nature works. The connection replaces

our destructive bonds. It enables us to enjoy responsible happiness,

to sensibly walk together, hand in hand, in the attractive real-life beauty, cooperation and peace of nature's amazing grace.

As exemplified by a published full response to an NAE training program activity assignment, whole-life learning includes information that actively includes the NAE process, the psyche and the soul.

"The Orientation Course Web of Life Imperative book offers more tools, knowledge and personal power for good than most therapies and spiritualities. Its information enables us to reverse our destructive relationships by empowering us to make thoughtful sensory connections with genuine nature. This connection responsibly satisfies the aching, ever-wanting hole in our psyche that has been produced by our excessive separation from nature, a hole that leads us astray"

Susan Chernak McElroy,

Award winning, N. Y. Times bestselling author of Animals as Teachers and Healers and Heart in the Wild.

APPENDIX G: Researcher's Narrative of G/G Nature Statements

1. My experience in Nature is a unique blueprint to creation itself.
2. My experience in Nature teaches me beyond what I think I can see.
3. My experience in Nature teaches me how to teach myself.
4. Our senses within and within natures connections will never let us down.
5. Nature is bountiful with wisdom and unconditional love.
6. Support is available through all our senses if we listen and ask.
7. Nature teaches us to access our basic/true spiritual selves through our chords that connect us to Mother Earth.
8. Everything is connected, that which is visible and that which is invisible.
9. That maple tree is my friend and its' only agenda is to be a conduit to the eons of knowledge within our grasps...when we reach out.
10. When I stretch myself past known reality and my conditioning within Nature, great things are able to transpire in Nature.
11. If I believe in myself and nature experiences, anything is possible.
12. Future experiences within Nature are not limited to unexplored geography, but a whole new dimension awaits us within Nature…or is this dimension connection a re-awakening of dormant senses/genetic wiring?
13. Nature provides potential for wholeness that is ever and omni present.
14. Nature through intention helps me to establish and sense all webstrings.

15. Nature and I are of the same breath.

16. Nature expresses itself in a moment of creation and intention.

17. My experience(s) in nature provides potential for wholeness that is everywhere.

18. My experience(s) in nature through intention helps me to establish and sense all webstrings.

19. My experience(s) in nature teaches me that Nature and I are of the same breath.

20. My experience(s) in nature expresses itself in a moment of creation and intention.

21. My experience(s) in nature is life building and enhancing.

22. My experience(s) in nature is beyond words and labeling.

23. My experience(s) in nature is healing.

24. My experience(s) in nature is a fulfillment of my genetic heritage.

25. My experience(s) in nature vibrates an awakening at a cellular level.

26. My experience(s) in nature offers comfort, balance and harmony.

27. My experience(s) in nature renews my universal relationship.

28. My experience(s) in nature helps me to connect to a higher Self.

29. My experience(s) in nature moves my Spirit to new levels of awareness.

30. My experience(s) in nature counsels and guides me.

31. My experience(s) in nature brings forth hope and restorative energies.

32. My experience(s) in nature self-actualizes the potential within me.

33. My experience(s) in nature reminds me of the joy found in every moment.

34. My experience(s) in nature removed the bonds of time by transporting me to new and beautiful spaces.

35. My experience(s) in nature let me be me.

36. My experience(s) in nature teaches me to accept myself as I am…. without apologies.

37. My nature experiences sustain my beliefs and optimism.

38. My nature experiences flow through trust and love. I feel loved and uplifted, which gives me the freedom to reach out and dare to trust.

39. Nature keeps my life simple and connected.

40. Nature gives me a sense a freedom.

41. Nature allows me to take a risk.

42. Nature allows me to let go and be who I am.

43. Nature uplifts my soul and helps me to soar to new horizons. My nature experiences help me to live gloriously in the NOW.

44. Nature teaches us.

45. Nature is my true nature.

46. Nature reflects my conscious, non-labeled, non-judging presence.

47. My experience in Nature is a unique blueprint to creation itself.

48. My experience in Nature teaches me beyond what I think I can see.

49. My experience in Nature teaches me how to teach myself.

50. Nature connections open our minds to possibilities beyond our environmental conditioning.

51. My experience in Nature illustrated my ‘invisible core’ connections.

52. My experience in Nature brought comfort and rejuvenation.

53. My experience in Nature offers learning and wisdom.

54. My Nature experiences remind me of who I am.

55. My Nature experiences allow me to grow in relationships with others…like doing this activity with my husband because it brought us closer together.

56. My Nature experiences reflect the support in Nature that moves us to life giving purposes and the miracle of life.

57. My Nature experiences remind me about personal choices.

58. My experiences in Nature illustrate an aliveness in myself, my daughter and all that is Nature. We are connected to joy and all that is positive, if we search for the secrets of life and living...and never, ever give up.

59. My experiences in Nature create loving interactions, moments and lasting, cherished memories…snapshots of Nature and Time.

60. My experiences in Nature can guide me to community experiences that are connected and respectful of the Earth.

61. My experiences in Nature always provide new insights.

62. My experiences within Nature break down old wiring.

63. My experiences in Nature help me to understand oneness. My experiences in Nature show that anyone at any age can connect with Nature and understand these PNC activities and maintain connections.

64. My experiences in Nature give me new insights and are learnings each and every moment….even when I revisit a naturally attractive area. It is like a PNC tune up 'under the hood'.

65. My experiences in Nature keep the connected, curiosity seeking child alive in me…and wondering about all the secrets of life. I will be eternally fascinated by all the unknowns.

66. My experiences in Nature show that I get good feelings from asking permission to interact with anything and anyone in a natural area.

67. My experiences in Nature encourage respect and new understandings.

68. My experiences in Nature demonstrate that each universal interaction is a miracle. Nature is the miracle. The experience is a miracle. You are the miracle.

69. My experiences in Nature remind me to stay connected to what is real.

70. My experiences within Nature nurture survival.

71. My experiences in Nature are pure and nameless webstrings of life.

72. My experiences in Nature keep me yearning for the Wild.

73. My experiences in Nature teach me I love the smell of millions of rain drops nourishing the Earth in the middle of the night.

74. My experiences in Nature give my family Nature loving memories.

75. My experiences in Nature give me a face-to-face-with Nature.

76. My experiences in Nature restore balance within.

77. My experiences in Nature are gifts of NIAL, each one with a magical surprise.

78. My experiences in Nature are different, no two are alike.

79. My experiences in Nature reinforce my hope of nature connections for all the Earth.

80. My experiences in Nature provide for internal and external balance, which will allow me to live a life without fear and a support an inspired journey inward.

81. My experiences in nature teach me the proper use of knowledge and nature connections.

82. My experiences in nature provide serenity and invisible subconscious visible connections.

83. My experiences in nature always pull me back to what is important in life….the simple expressions of life.

84. My experiences in nature help me to remember who I am.

85. Nature teaches us.

86. Nature is my true nature.

87. Nature reflects my conscious, non-labeled, non-judging presence.

88. My experiences in Nature develop a more intensified Sensory Attraction Natural EcoIntelligence (SANE) within me, so long I include NNIAL in the equation.

89. My experiences in Nature re wire my trusting connections.

90. My experiences in Nature help me to learn new ways of thinking.

91. My experiences in Nature show me the creative direction I need to know to build NIAL within me.

92. My experience in Nature reminds me of the importance of making nature memories.

93. My experience in Nature reminds me to teach others.

94. My experience in Nature compels me to seek its' guidance in all matters.

95. My experiences in nature teach me that nature fills every crevice and space with NIAL.

96. My experiences in nature teach me that nonhuman and human species have many shared cognitive processes...some processes that are still beyond knowing.

97. My experiences in nature teach me that I can gather knowledge directly from nature (biognosis) and life.

98. My experiences in nature nurture my SANE (Sensory Attraction Natural Eco-intelligence) 'ness' responses to re connect disconnections and build new connections through NNIAL. NNIAL+ SANE = more PN Connections.

99. My experiences in nature teach me that sensory connections create a whole new way of experiencing powerful transformations within me.

100. My experiences in nature liberate me from wranglers.

101. My experiences in Nature show that I love the splash of the color green painting my real world.

102. My experiences in Nature show that I love the nestling canopy of trees.

103. My experiences in Nature show me that I am still a child.

104. My experiences in nature manifest the artist in me.

105. My experiences in nature give me intense sensory connections that color my world in every possible hue.

106. My experiences in nature re wires the 100 billion or so neurons that reside in my brain.

107. My experiences in nature teach me to work from the heart rather all from the mind.

108. My experiences in nature help me to see the vitality of life and feel joy from the tiniest of raindrops.

109. My experiences in nature refresh my senses.

110. My experiences in nature show me that the child in me is fascinated with movement of maple leaves on a windy, rainy night. It felt like a symphony of nature blessings.

111. My experiences in nature show me that a lullaby can be wordless as I listen carefully to the falling softness of rain.

112. My experiences in nature through the starry eyes of the night sky show me there are limitless possibilities. Therefore I am limitless possibilities.

113. My experiences in nature offer me opportunities to form new insights and a chance to reflect.

114. My experiences in nature give me an opportunity to refocus and find balance, when I breathe in the moment.

115. My experiences in nature teach me in gentle, patient understanding ways.

116. My experiences in nature through NNIAL offer a higher level of knowing and nature transformations.

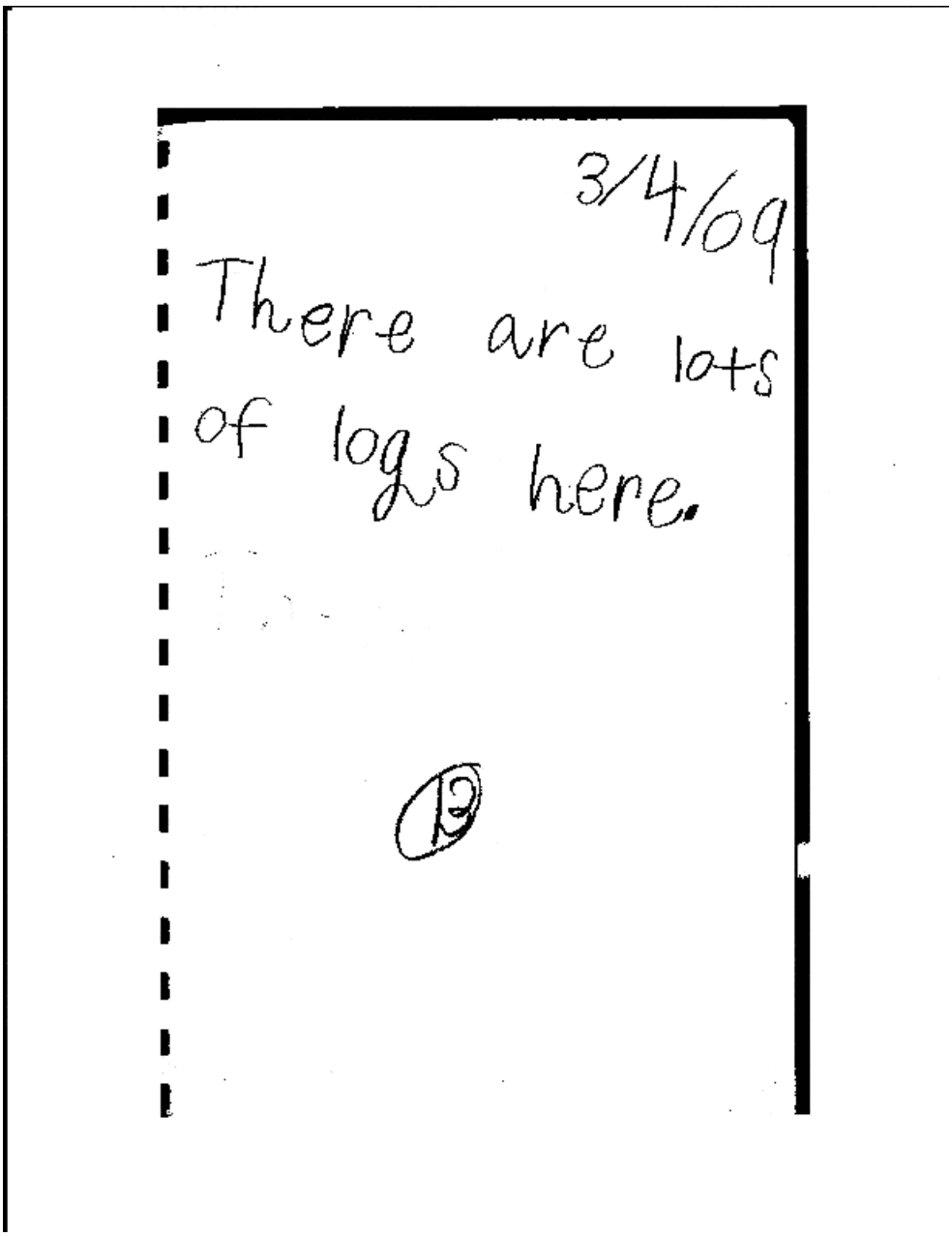
117. My experiences in nature show me that ordinary can be extraordinary.

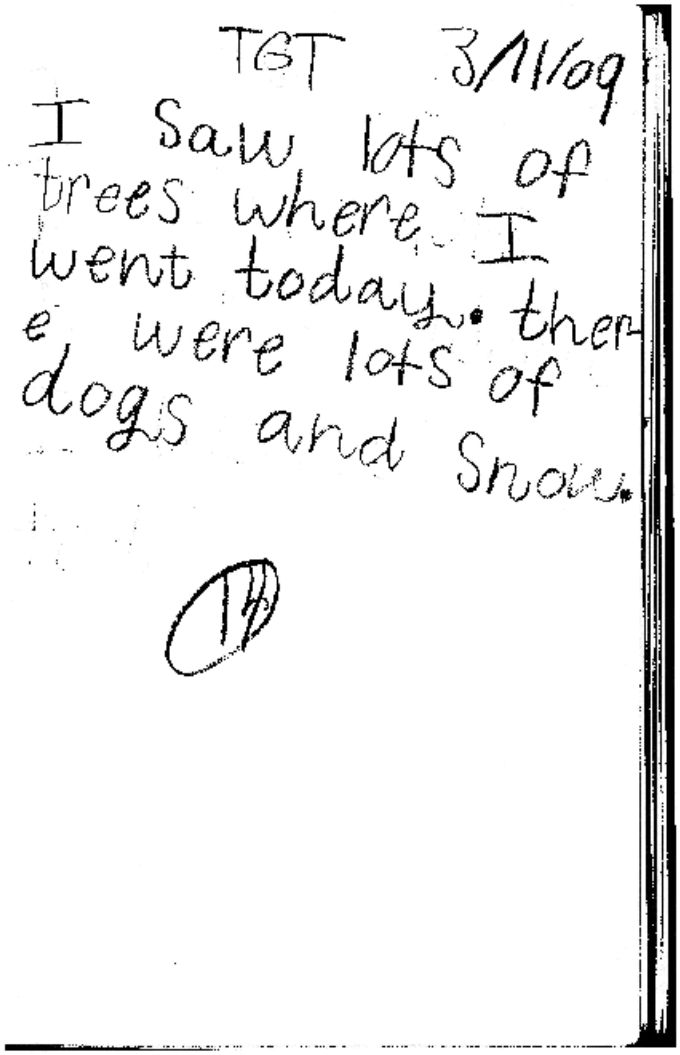
118. We need to be vigilant about exercising our Nature connections.

119. We need to keep nature in our lives to keep ourselves honest, open and aware.

120. Nature connections open our minds to possibilities beyond our environmental conditioning.

APPENDIX H: Samples of Nature Journal entries from a 7 years old girl who participated in this study. See next page for journal entries.

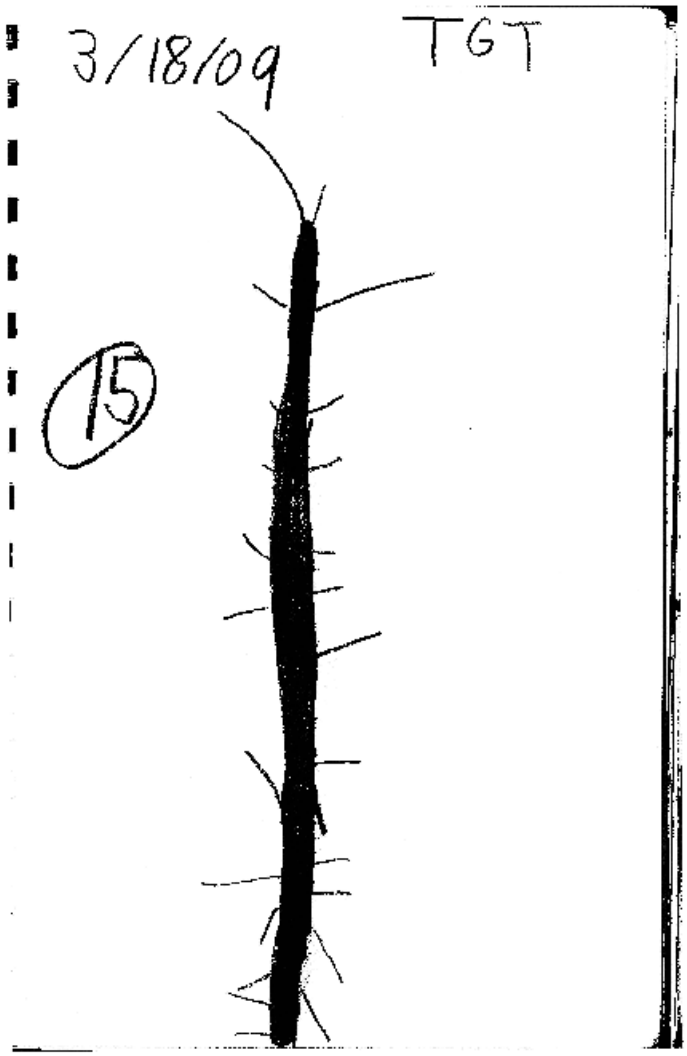

3/4/09
There are lots of logs here.
12

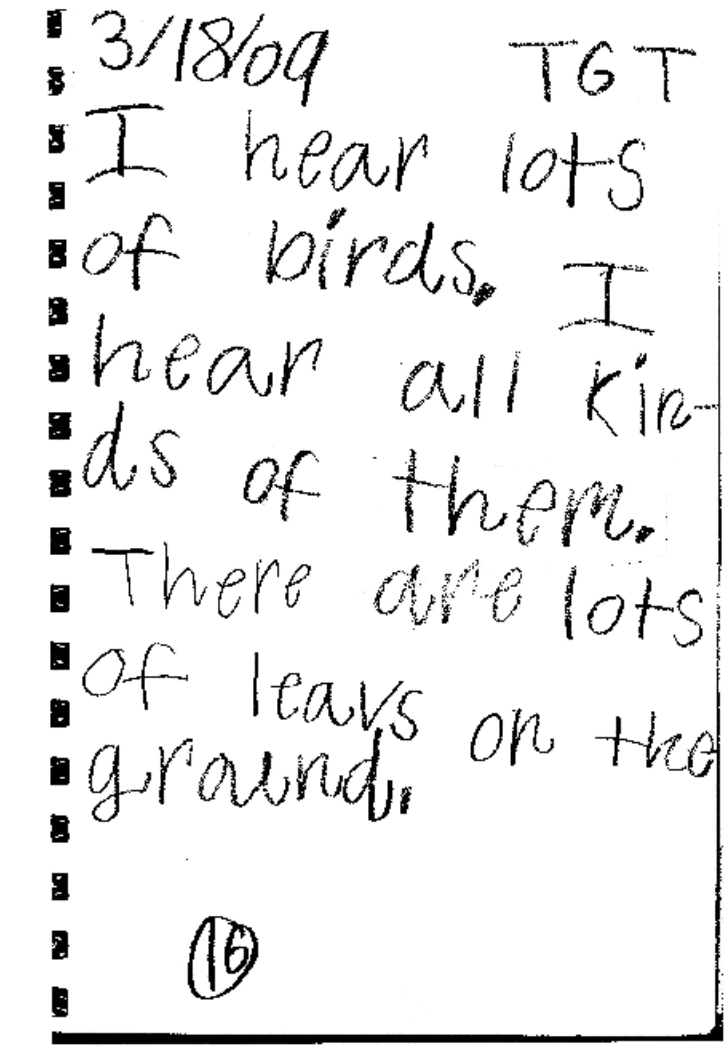


TGT 3/11/09

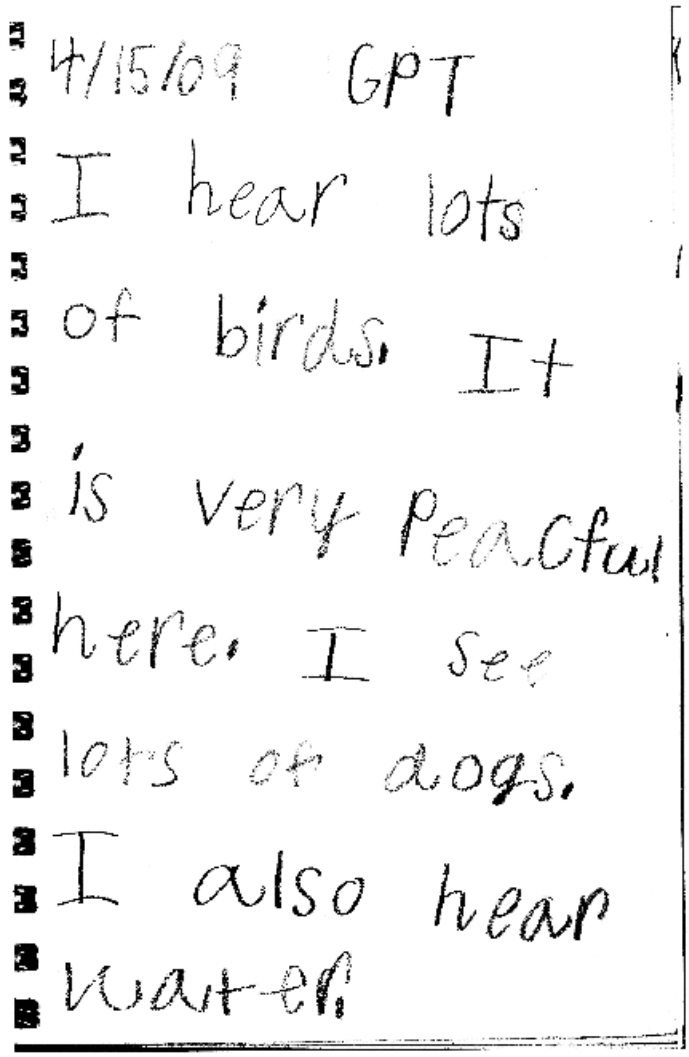
I saw lots of trees where I went today. there were lots of dogs and Snow.

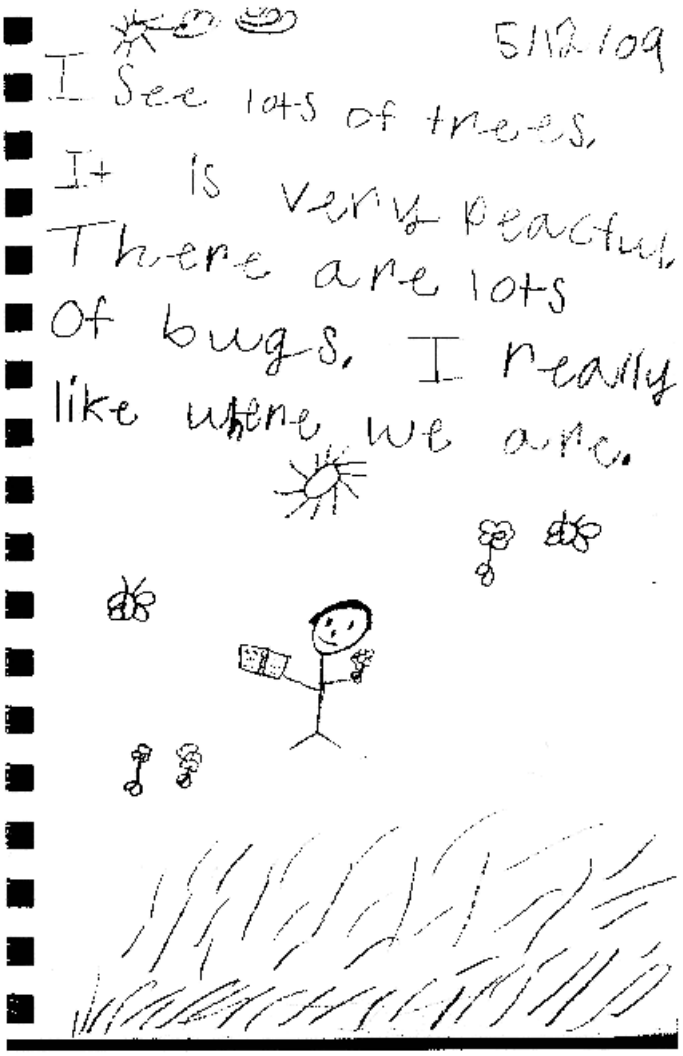
17

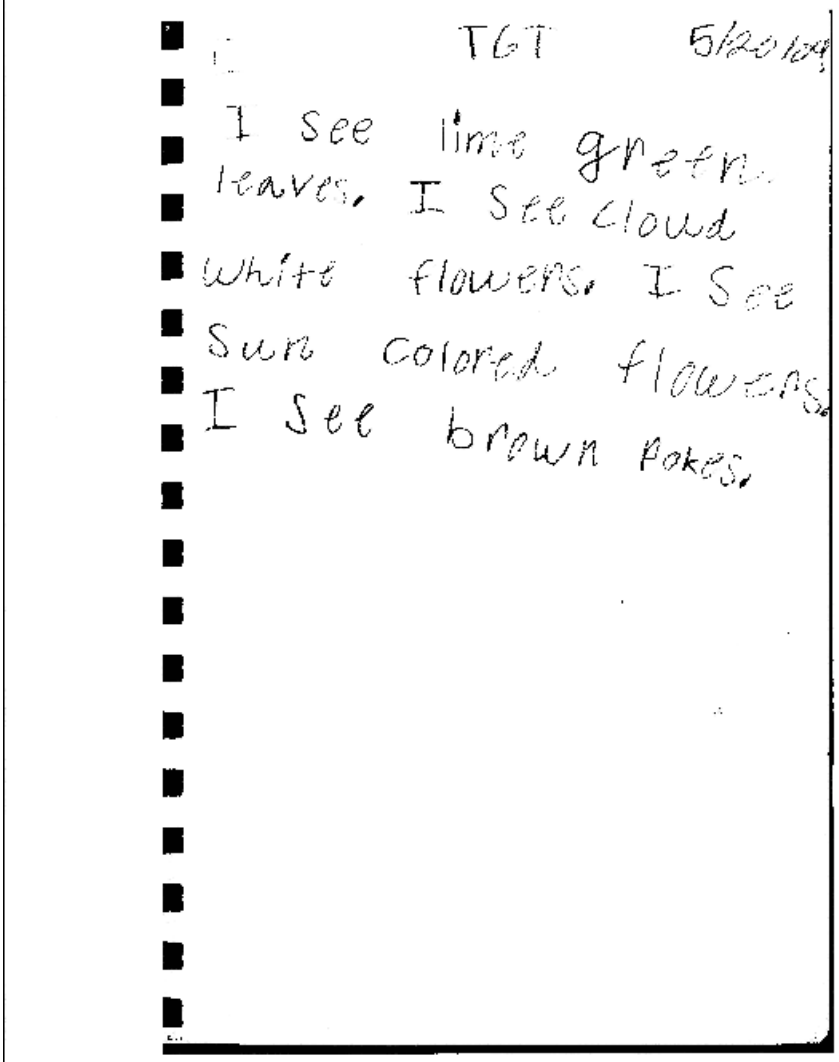

3/18/09
TGT
15

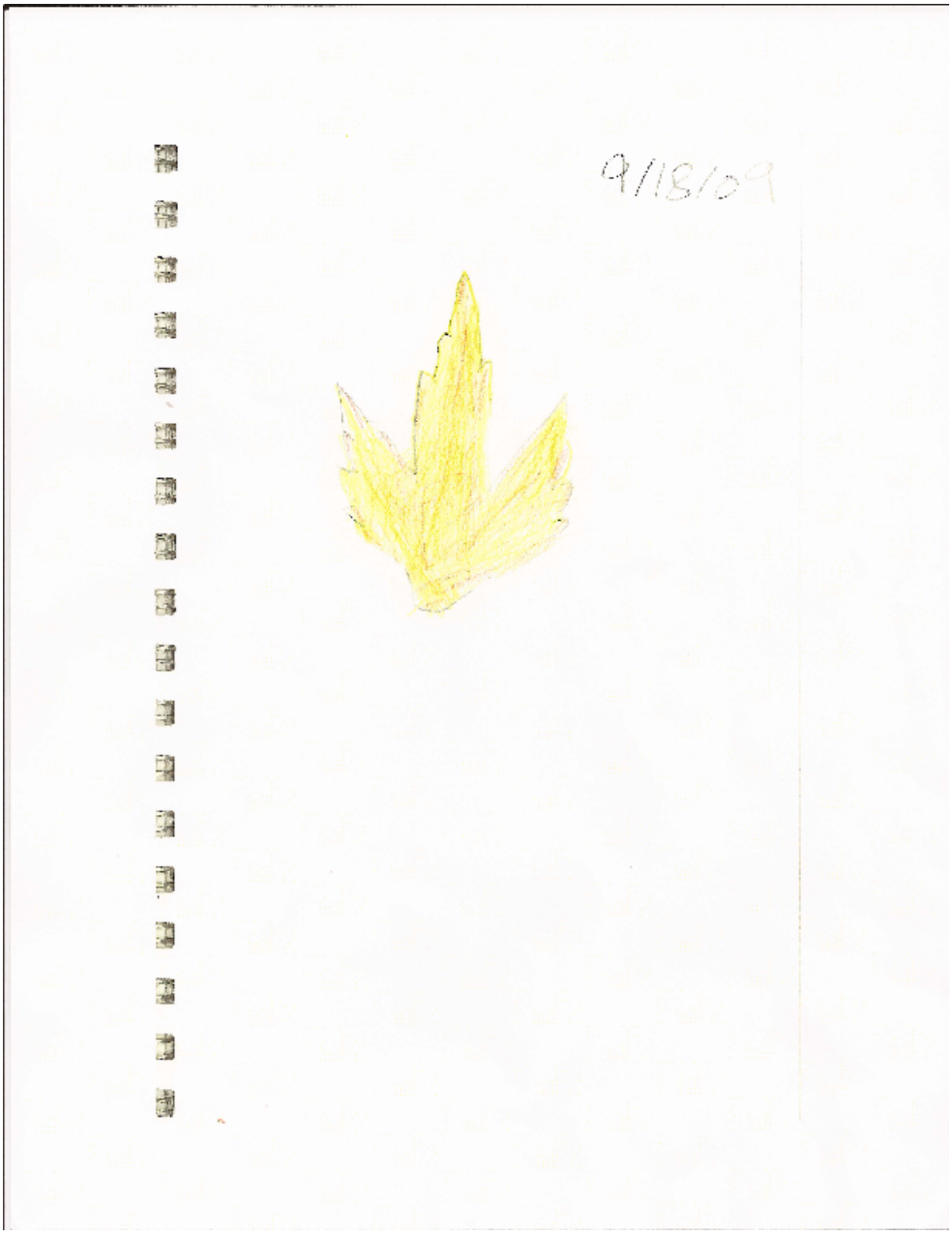

3/18/09 TGT
I hear lots
of birds. I
hear all kin-
ds of them.
There are lots
of leavs on the
ground.

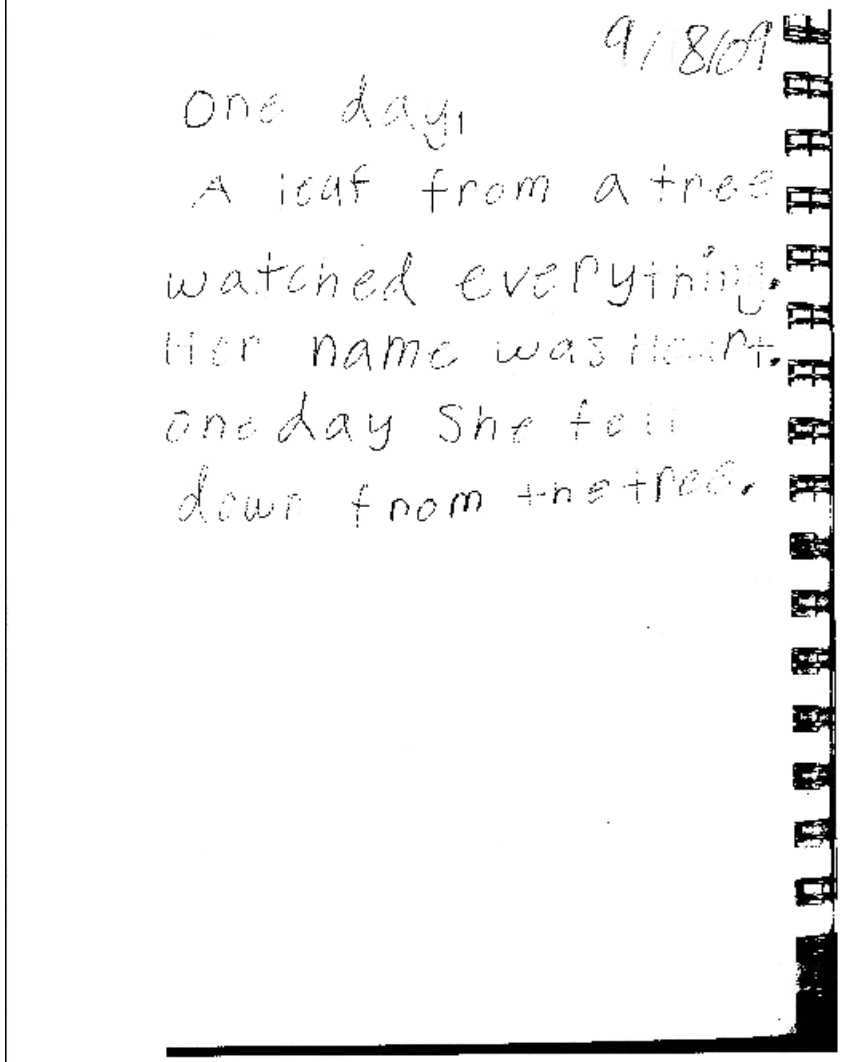
16


4/15/09 GPT
I hear lots
of birds. It
is very peaceful
here. I see
lots of dogs.
I also hear
water.

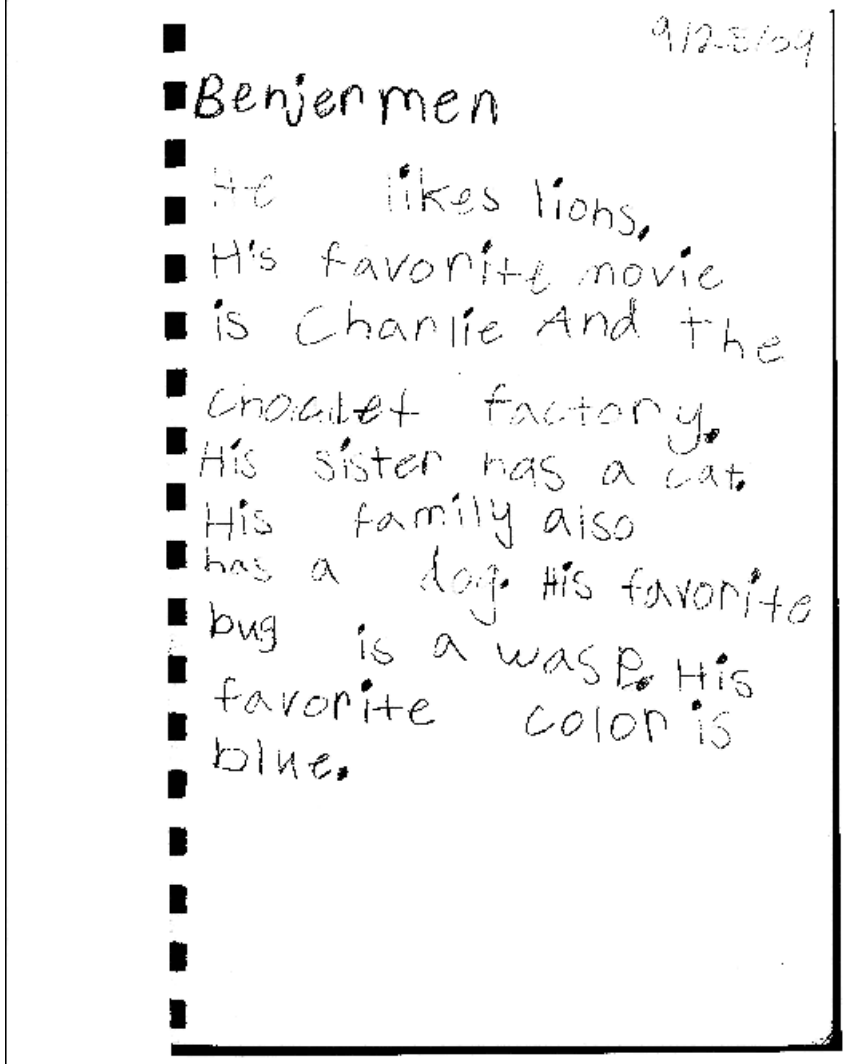

5/12/09
I See lots of trees.
It is very peaceful.
There are lots
Of bugs. I really
like where we are.


TGT 5/20/09
I see lime green leaves. I see cloud white flowers. I see Sun colored flowers. I see brown pokes.


9/18/09


9/18/09

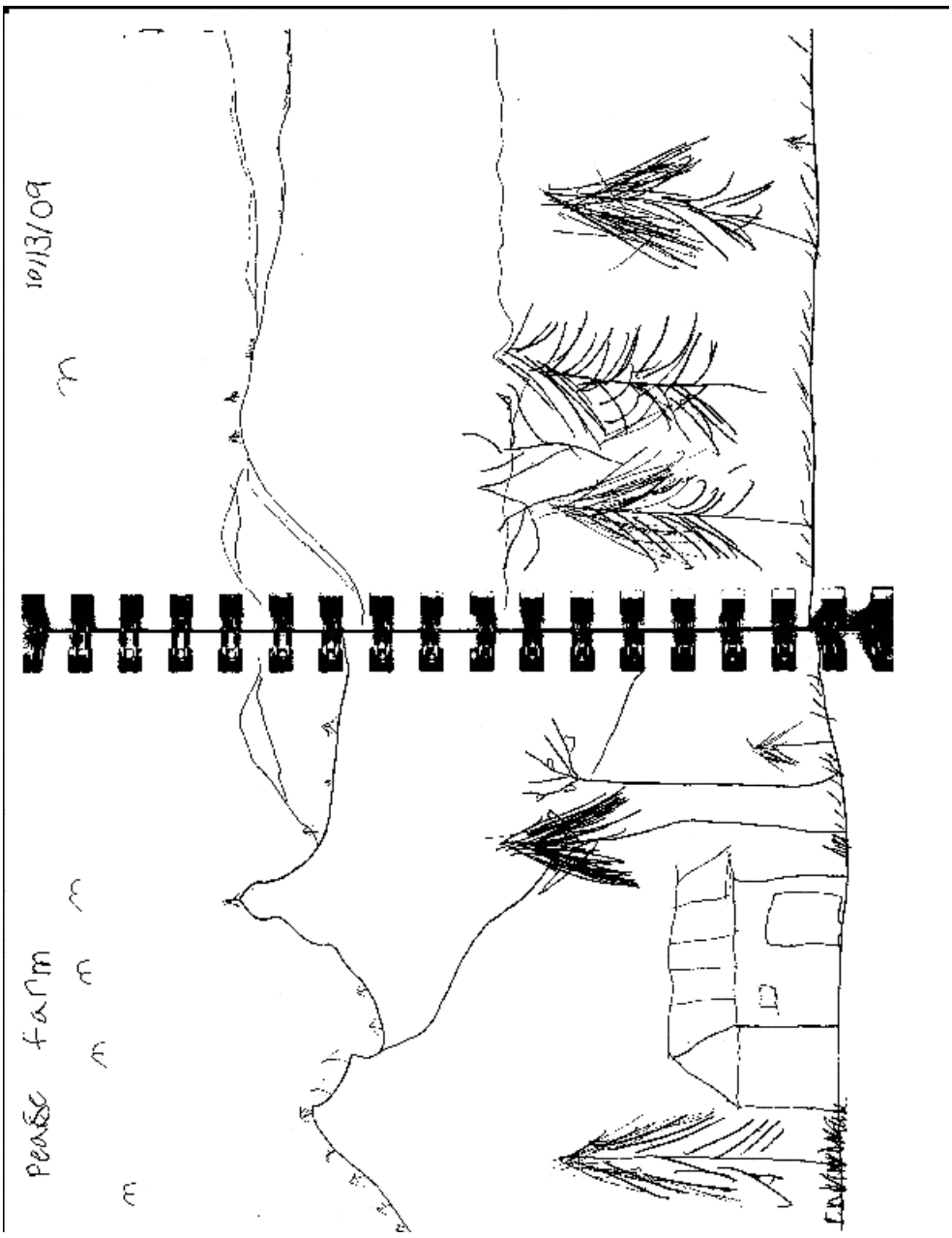
One day,
A leaf from a tree
watched everything.
Her name was Heart.
one day She fell
down from the tree.


9/23/04

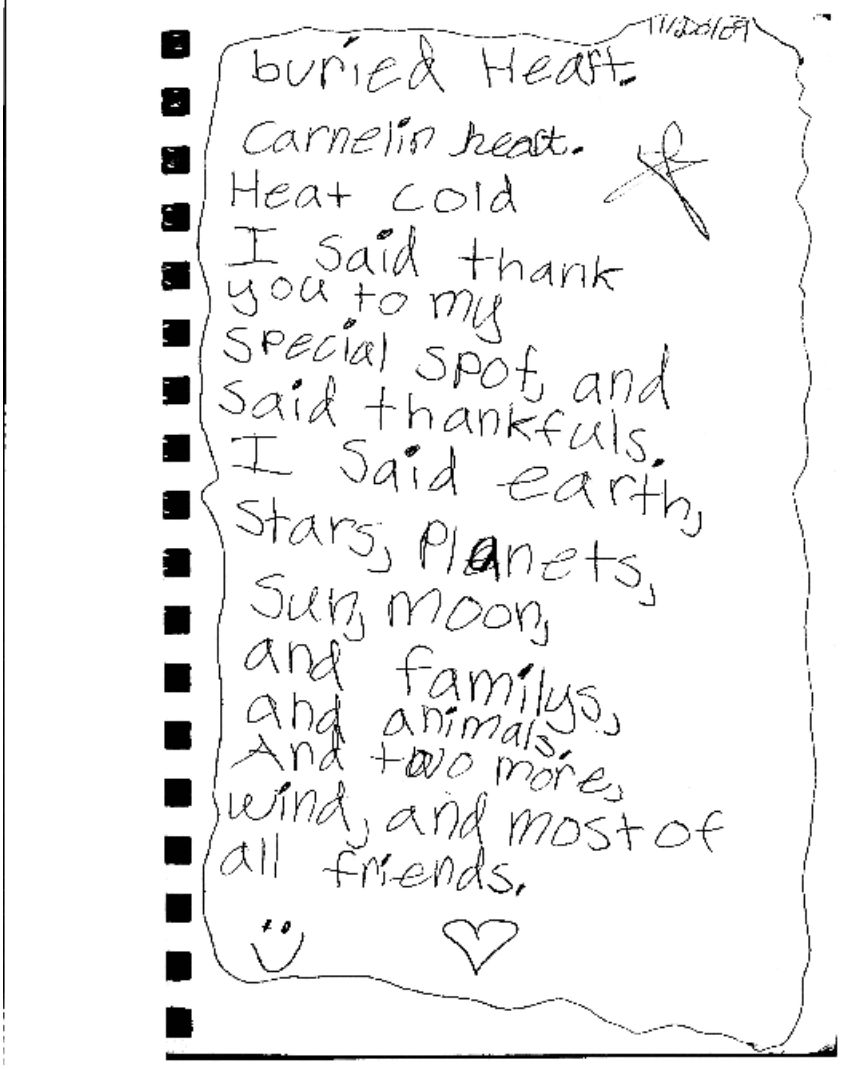
Benjermen

He likes lions.
His favorite movie
is Charlie And the
Chocolet factory.
His sister has a cat.
His family aiso
has a dog. His favorite
bug is a wasP. His
favorite colon is
blue.

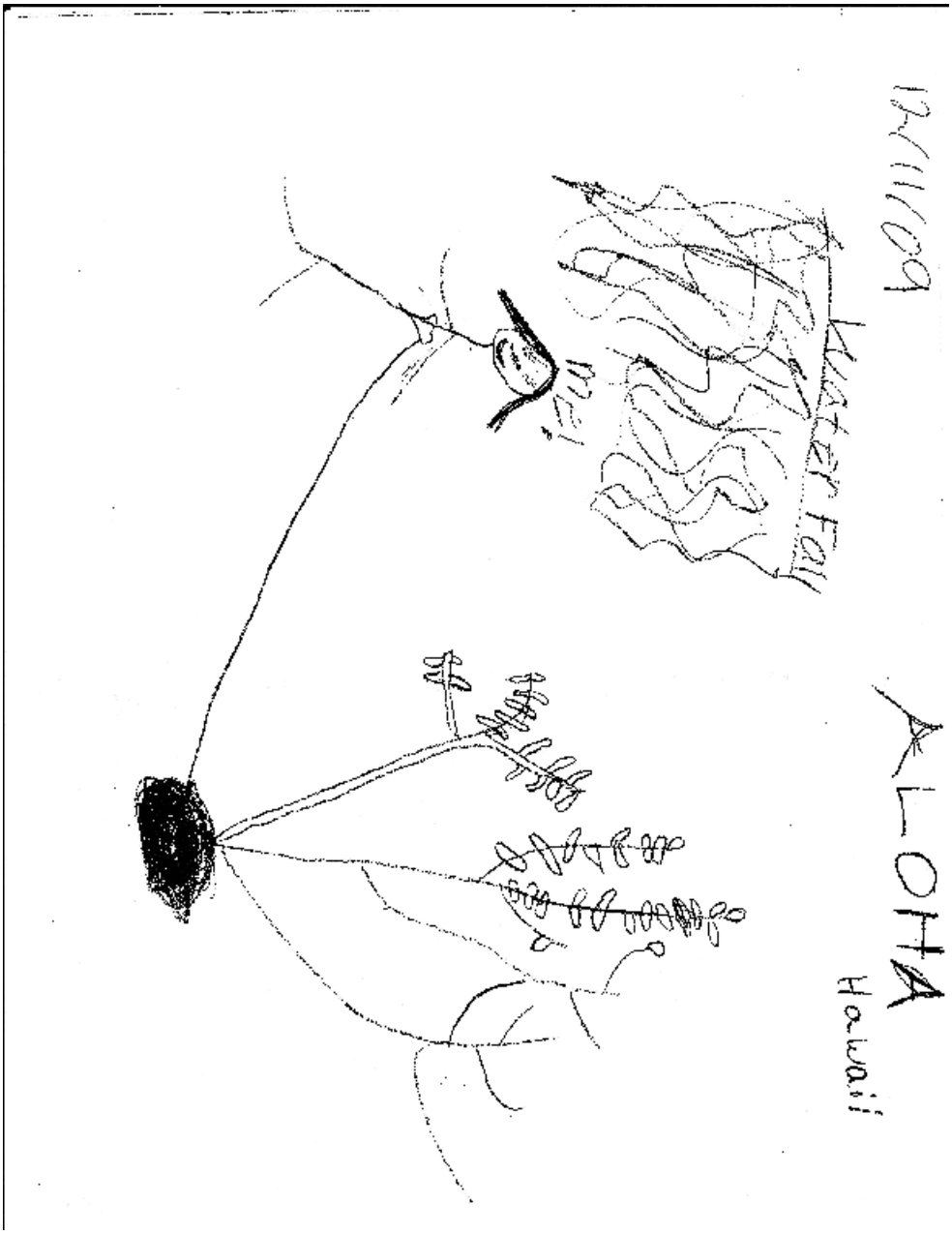

cottonwood 10/9/09

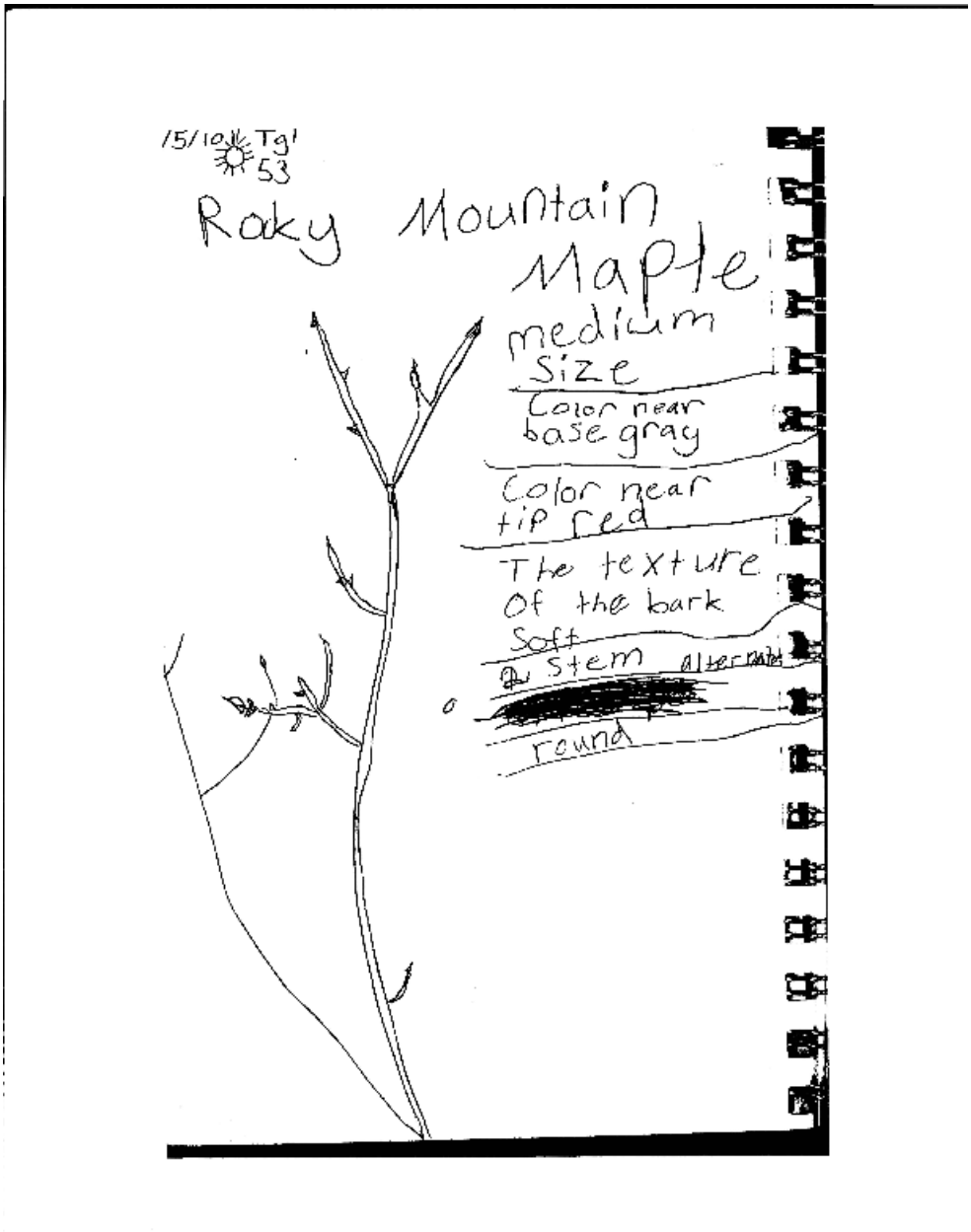

10/13/09
Peace farm

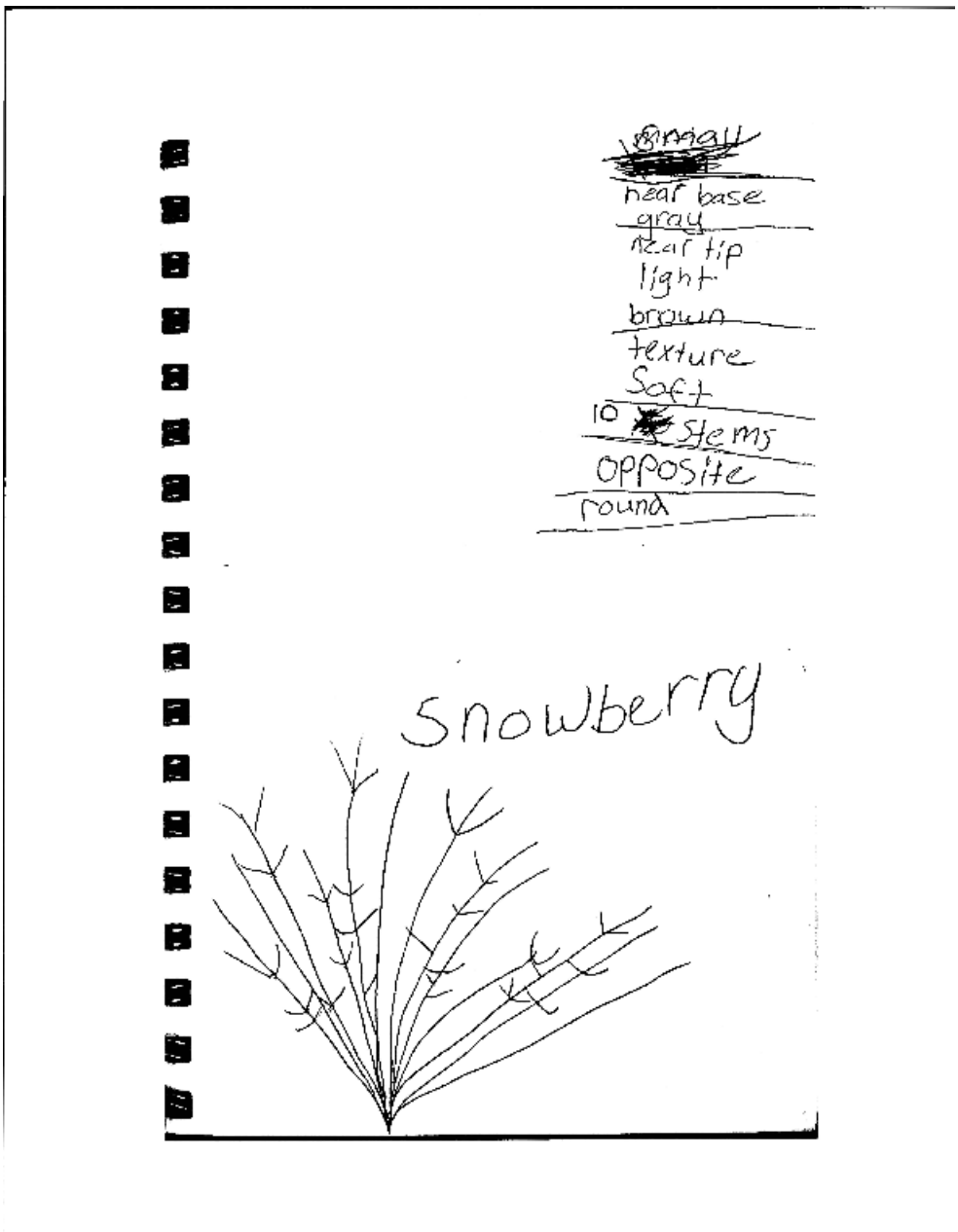

happy
leaves all around
Leaves friend
happy and prince



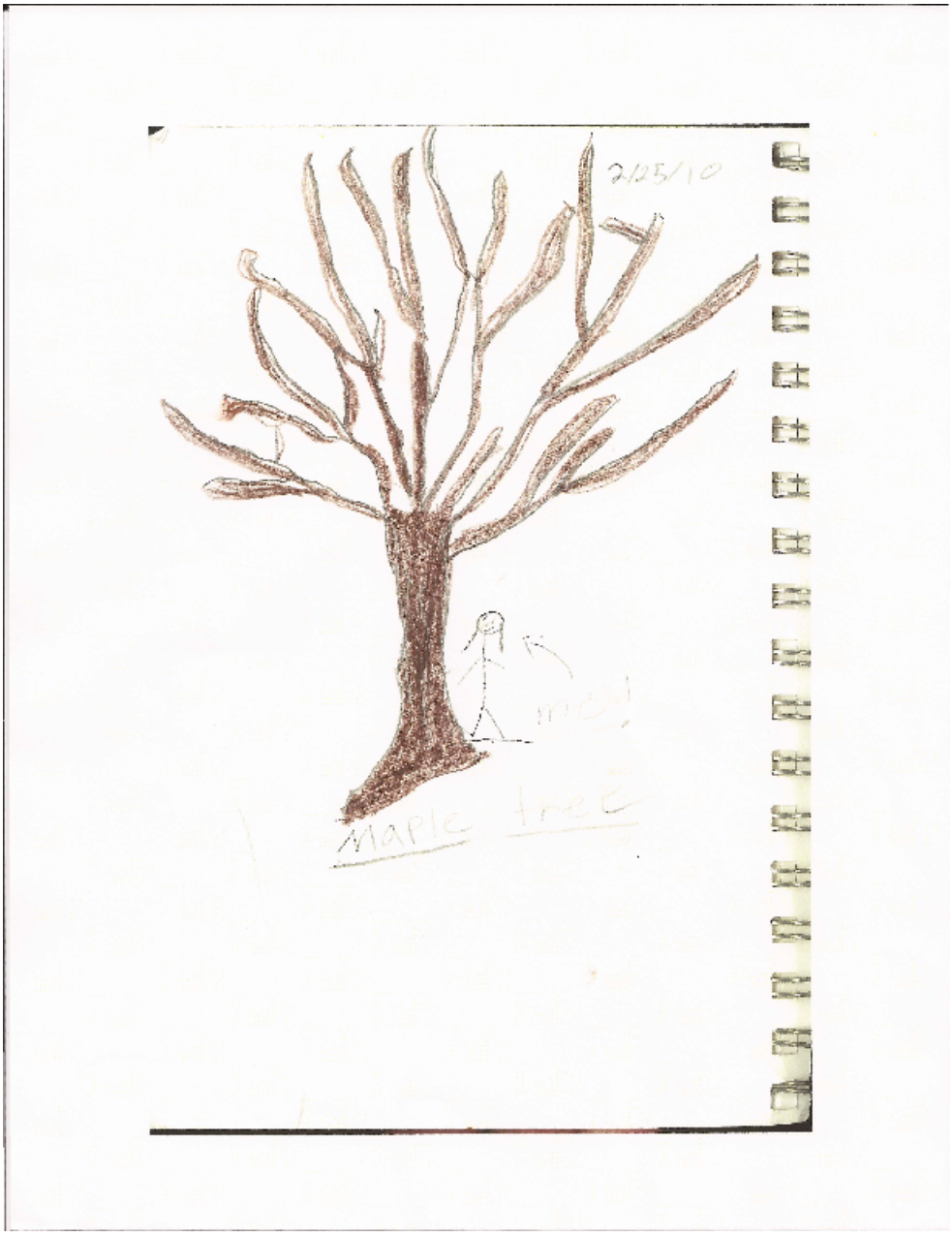
buried Heart.
Carnelin heart.
Heat cold
I said thank
you to my
special spot, and
said thankfuls.
I said earth,
stars, planets,
Sun, moon,
and familys,
and animals,
And two more,
wind, and most of
all friends.


Waterfall
ALOHA
Hawaii

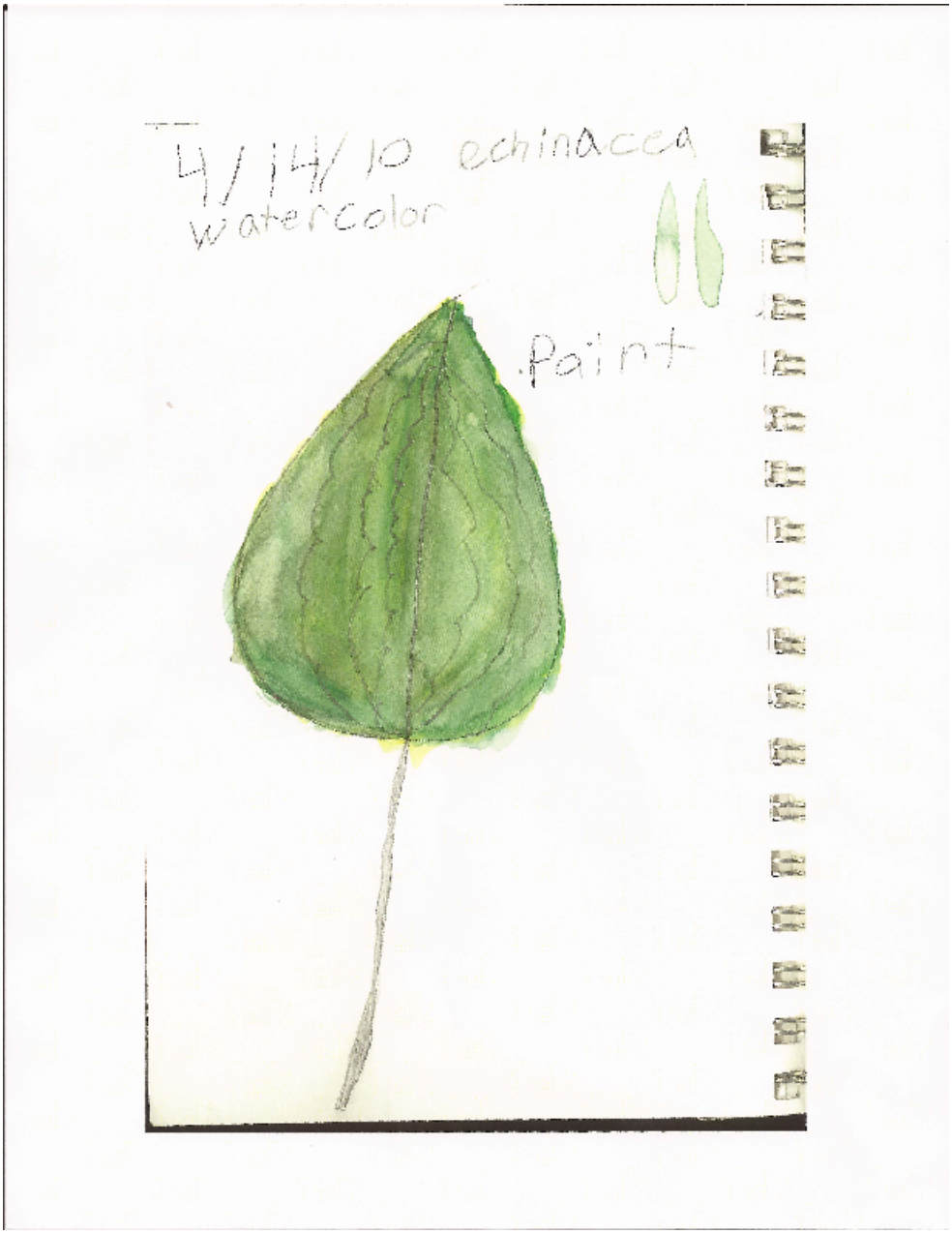

15/10 Tg' 53
Raky Mountain Maple
medium size
Color near base gray
Color near tip red
The texture of the bark Soft
stem alternate
round

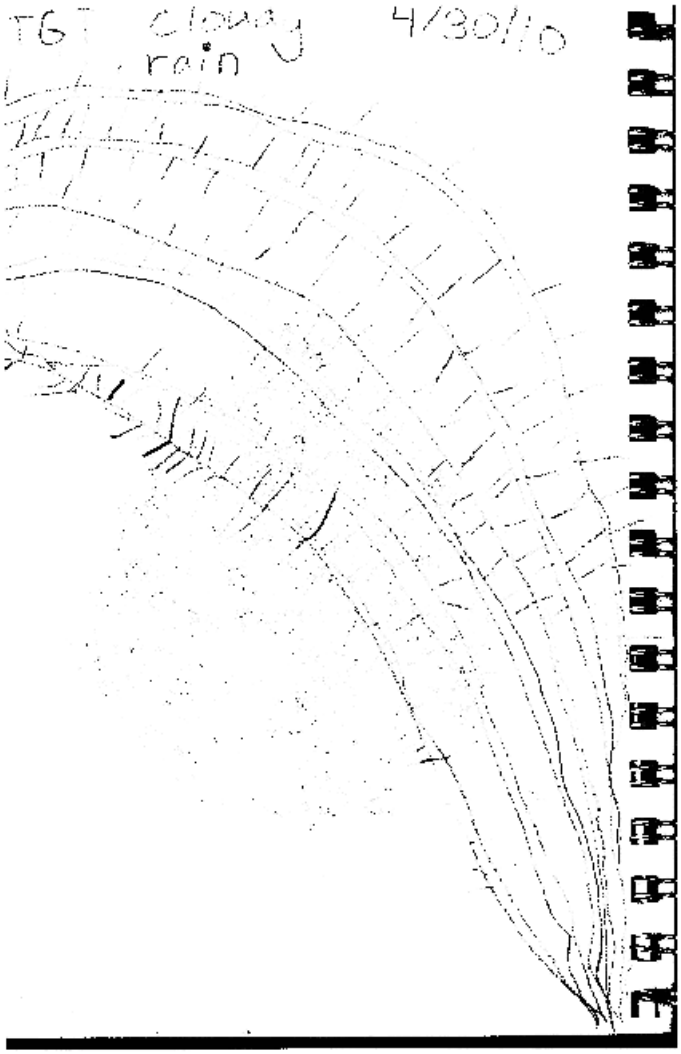

small
near base
gray
near tip
light
brown
texture
Soft
10 stems
opposite
round
snowberry

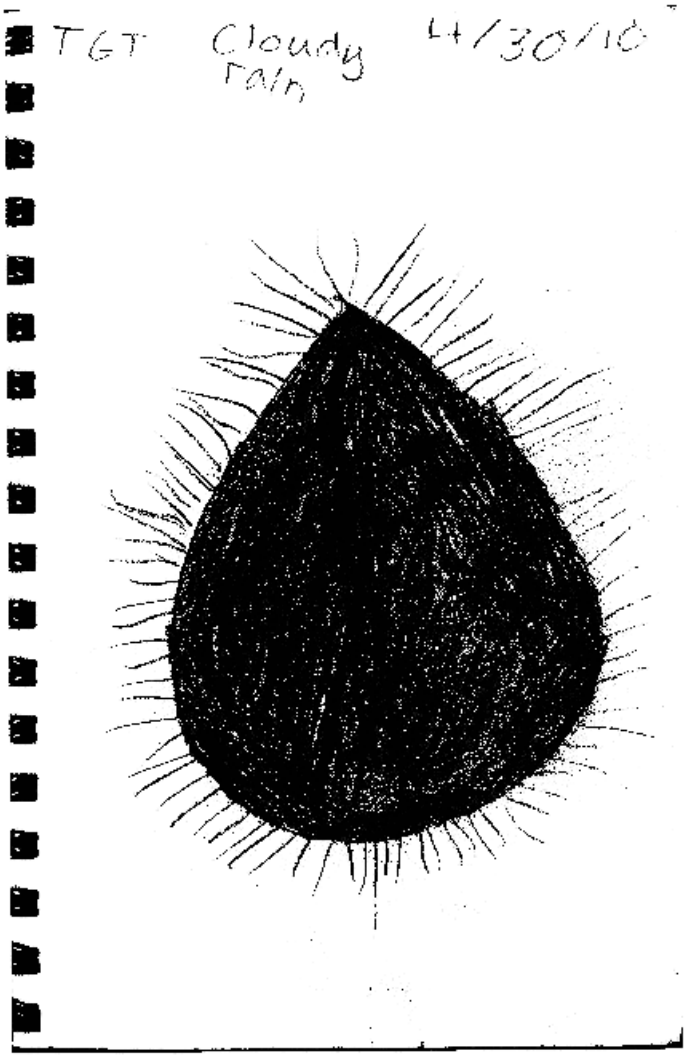

3/23/10
Maple twig
• smooth bark
• two additional scars
• brown
• alternate
10X bigger
Maple Bud
• smooth
• scaly
• green brown

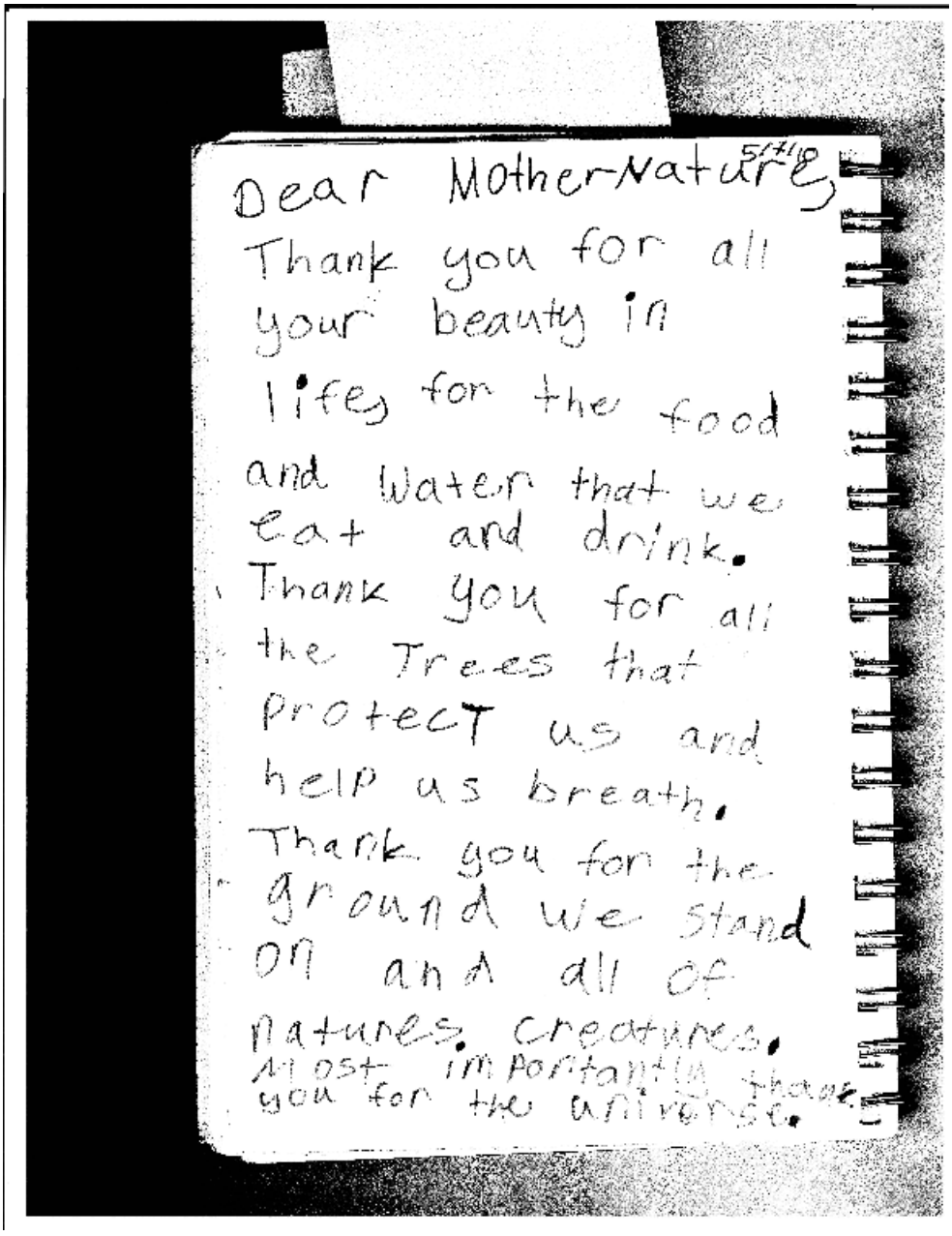

2/25/10
Maple tree

Joey 8years
Old Peaceful
2 ft roots
Planted
like friends


4/14/10 echinacea
watercolor
paint


TGT cloudy
rain
4/30/10


TGT Cloudy 4/30/10
rain


Dear MotherNature, 5/7/19
Thank you for all your beauty in lifes for the food and water that we eat and drink.
Thank you for all the Trees that protect us and help us breath.
Thank you for the ground we stand on and all of natures creatures.
Most importantly thank you for the universe.

Air 6/9/10

Blades of grass Waterfalls

Calling Birds • Xtra beautiful

Duck family [illegible]

evergreen trees Nature

flying Osprey Zealous naturalist

Geese

Hazardly storms

Ice in the river

Jumping crickets

kind, loving [illegible] trail

Loving people

meandering stream

Nature connections

Owls

Pretty clouds

Quiet wind

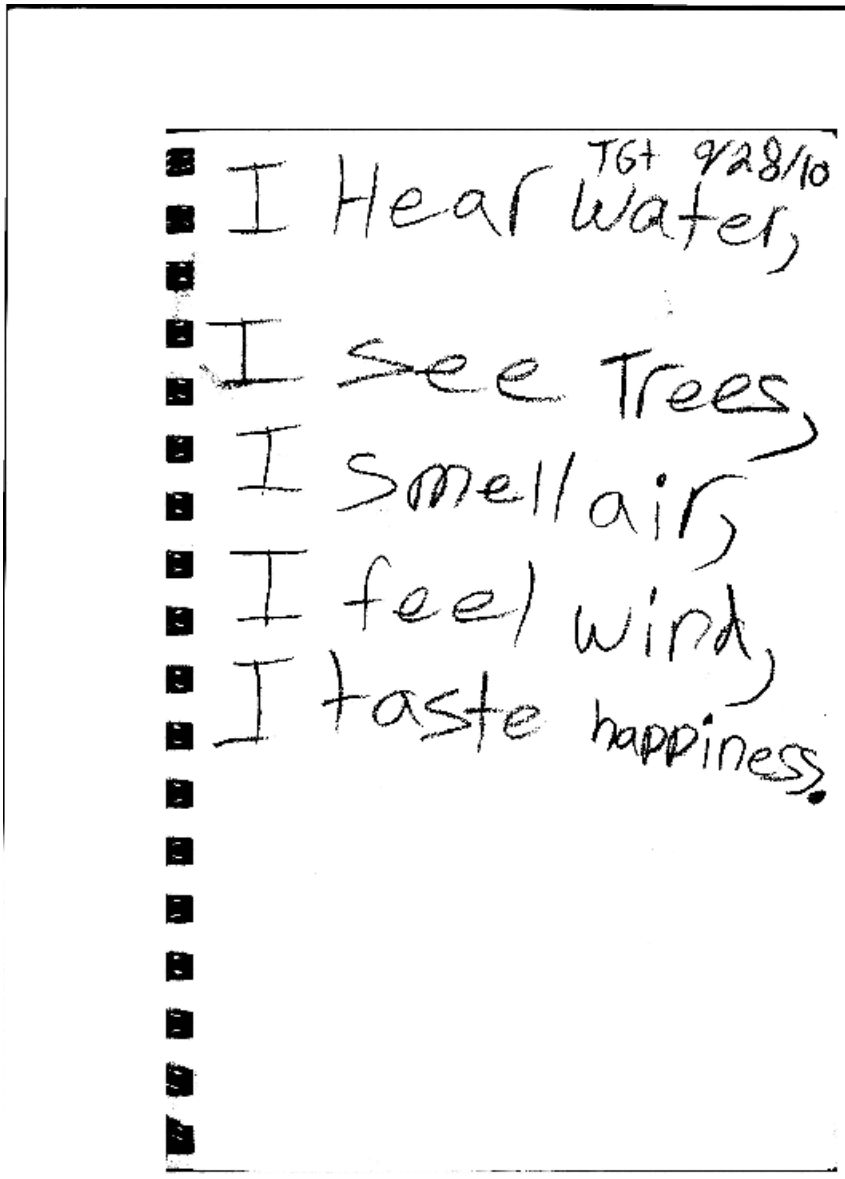
rainbows

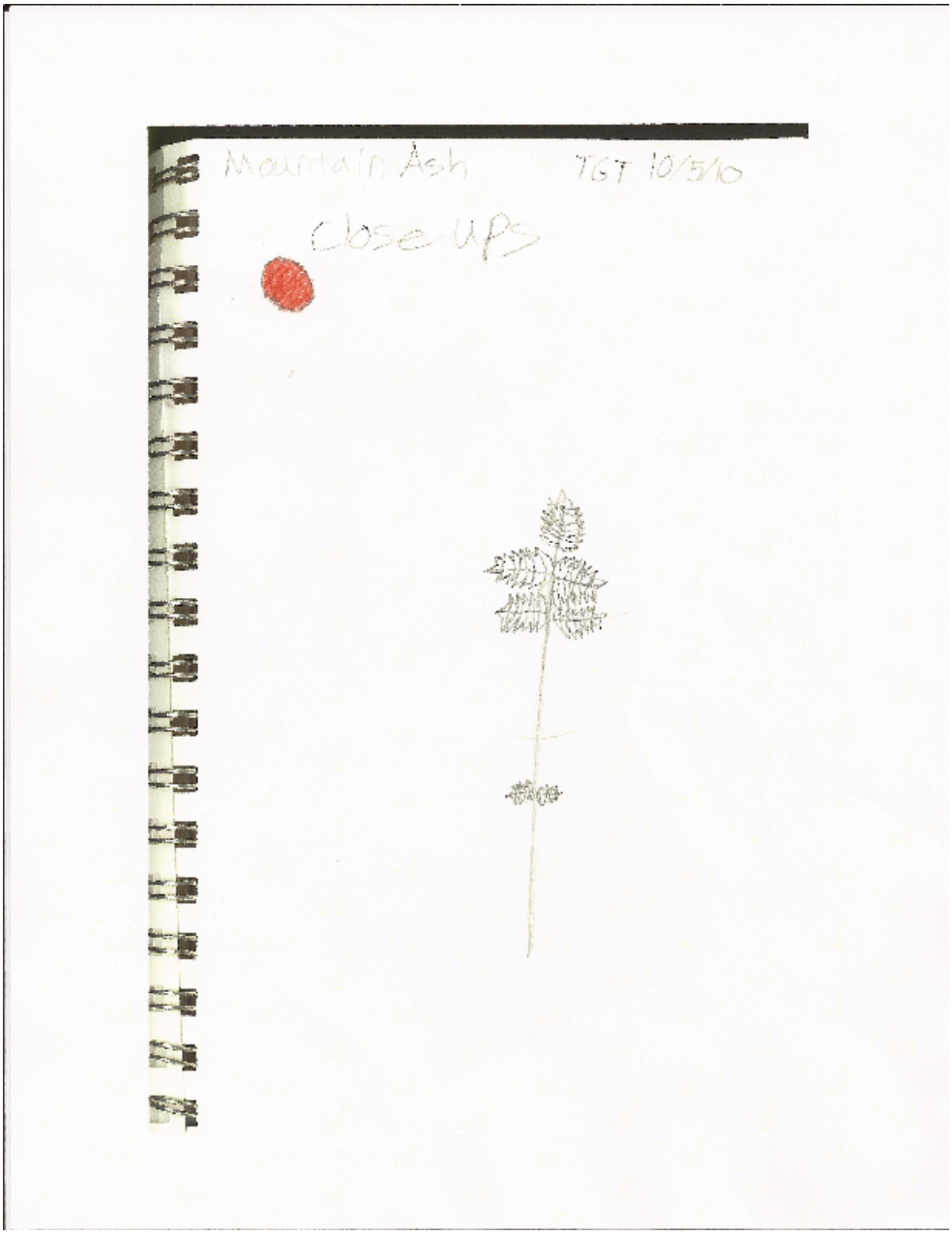
Secret spot

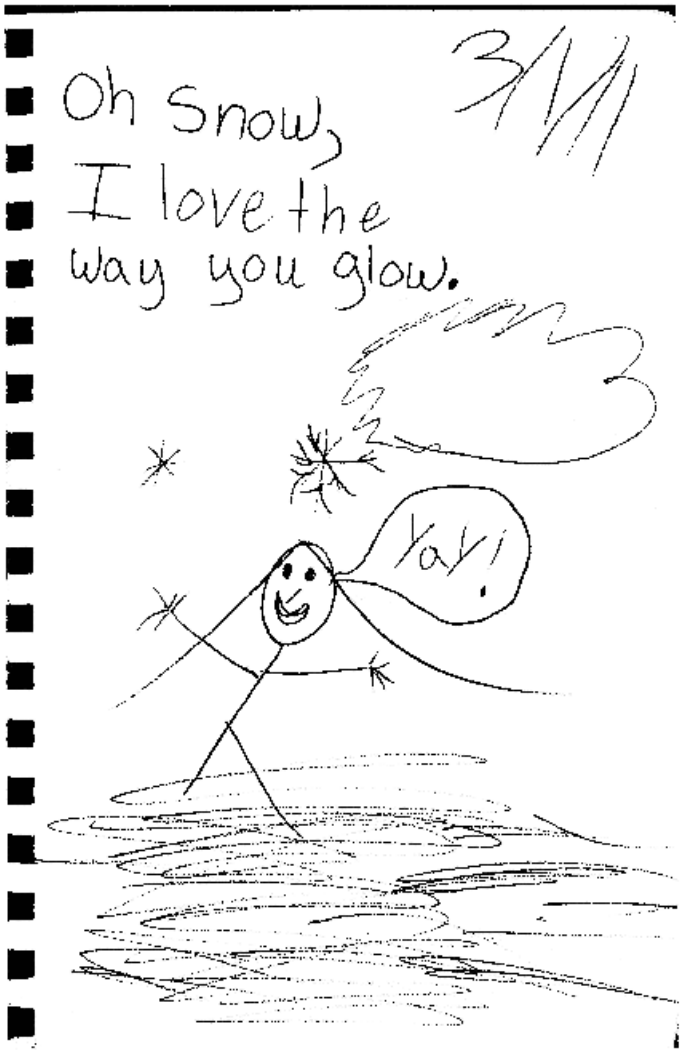
tiny buds

unique animals

very tall trees

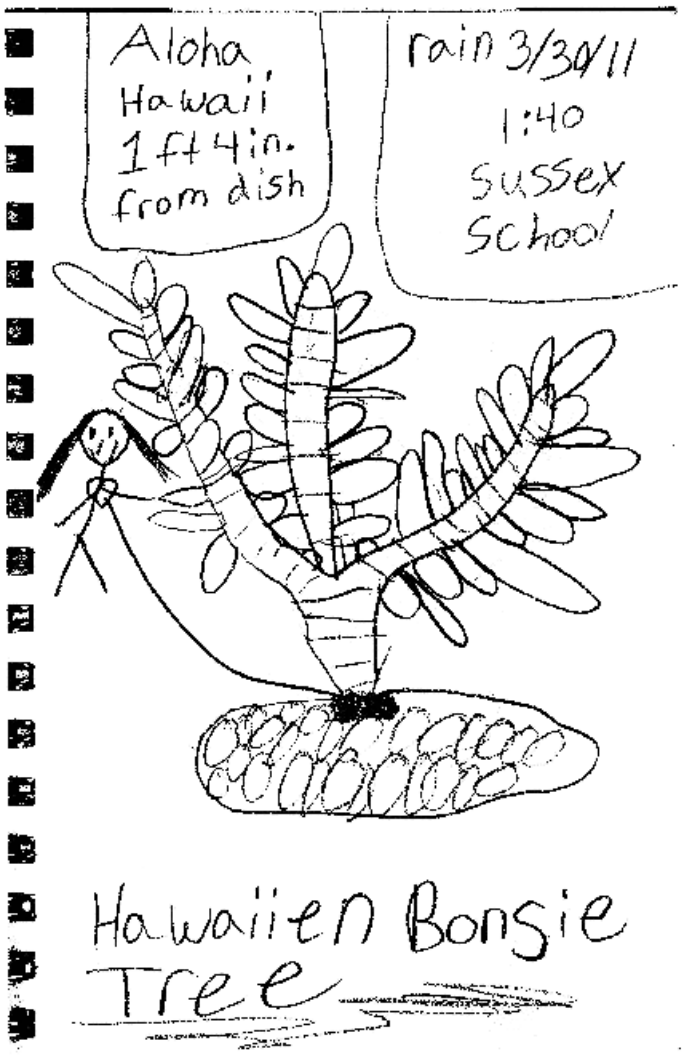

TGt 9/28/10
I Hear Water,
I See Trees,
I Smell air,
I feel wind,
I taste happiness.


Mountain Ash
TGT 10/5/10
Close Ups


3/11/11
Oh Snow,
I love the
way you glow.
Yay!

Woodpeckers / 39° J/H 3/23/11
woodpeckers 1:38pm

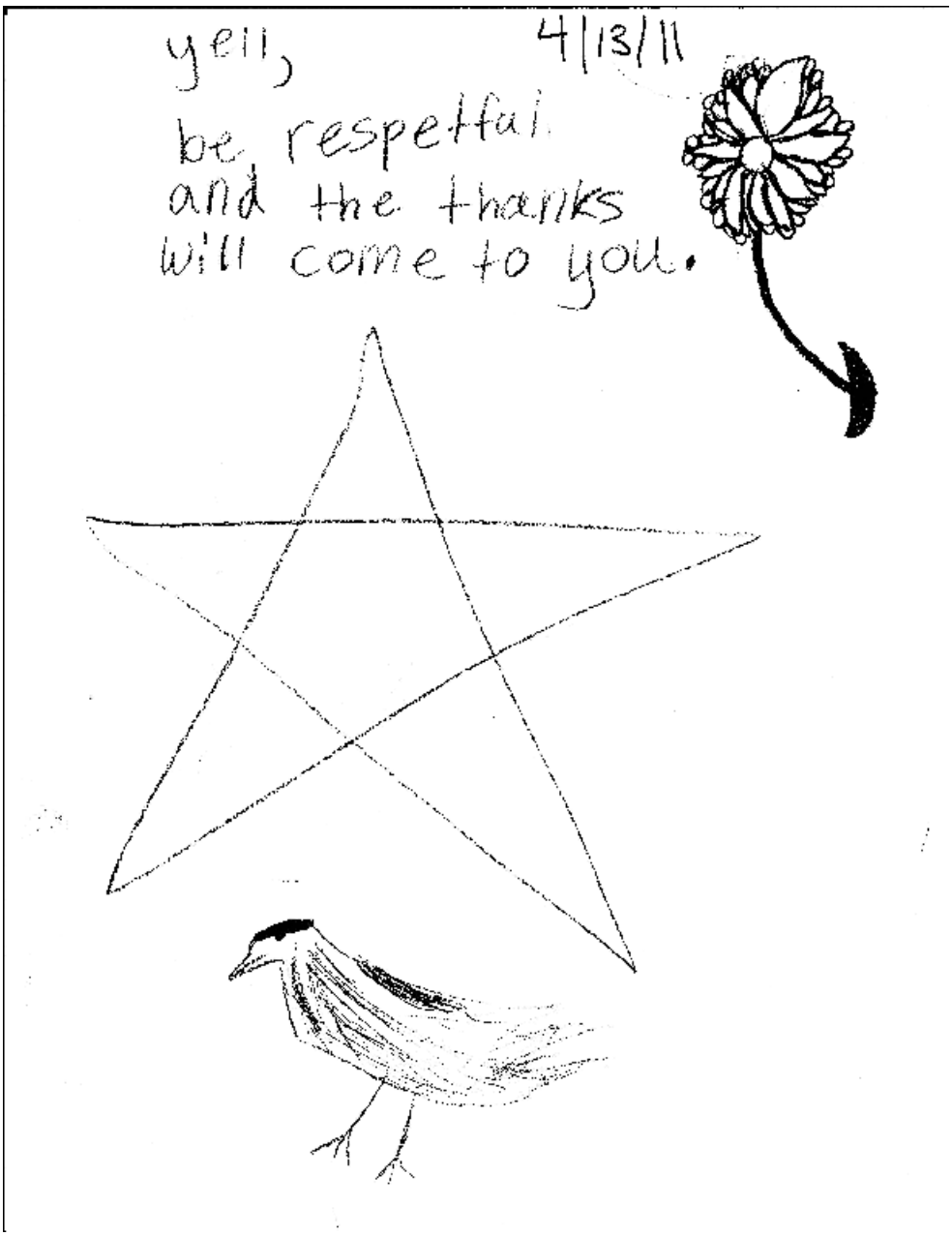
They're all around
me,
They chirp and
chirp,
They peck and peck.
like drums beating
in the woods,
Woodpeckers.


Aloha
Hawaii
1 ft 4 in.
from dish
rain 3/30/11
1:40
Sussex
School
Hawaiien Bonsie
Tree

4/13/11 I've your life

Please live
your life full
and strong,
be happy
and not worried,
be respected
and loved,
treat yourself
well,
give thanks
to what you
have,
treat the
earth well
too,
pick up trash
and be respectful,
don't cut down
trees or liter,
give respect to
others,
don't fight or

turn to back


yell,
4/13/11
be respetful
and the thanks
will come to you.

APPENDIX I: PNC Participant Feedback

http://www.ecopsych.com/survey4.html

"The value of PNC to me is that it has led me to a direct personal relationship with all my life. For the first time I have the sense of being connected to the flow of living. Many people talk about being in the here and now but PNC has enabled me to DO it." Chuck M.

"Since completing the PNC activities, I find that I tend to emphasize my similarities with others rather than differences. I tend to be less cynical about society and our future. I find myself picking up any trash I might find while hiking and have become more outspoken on issues relation to protection of the environment. I contribute more or my time and money to causes which promote social welfare and environmental sensitivity. I found in my life the PNC process to be truly surreal life-changing. My daily behaviors and attitudes now reflect a larger faith and understanding, that I am not separate from the world around me but an integral part of it. My life quotes reflect that I have an unshakable faith in the process of the good life and all its manifestations. The PNC activities have helped me realize that I am a whole made up of many parts which are themselves whole. They have helped me realize that I, too, am a part of a whole greater than myself." Bob H.

"With both the PNC list and two of the PNC courses, my life has been greatly enriched. Where I was very depressed in regards to the future of our planet and all life on it, I am now convinced that with encouraging people to participate in the exercises of Reconnecting With Nature....there is a very good chance we can heal the wounds of abuse and neglect we have thrust upon the Great Mother. Both my personal and professional lives have benefited from PNC...My interactions with employees, family and friends have improved greatly. My stress levels have dropped tremendously, migraines have been non-existent for about 2 months and I am sleeping through the night instead of waking 4 and 5 times. The most important meaning of life gift I was given with the list and the courses, has been the ability to interact with nature on a personal level....my inner child is being allowed to grow and emerge as a valid and needed part of myself." Patricia A.

"PNC has provided a number of important simple life experiences for me, most of which I not only remember but also bear fruit for me on a continual basis. It provides a life style tool for almost immediate grounding and centering of me, which is important to me and enables me to be part of my social and professional community; a participant in surreal life and the human web of life. PNC has value to the business world in that it can provide centering or grounding of a business team in pursuit of its goals. In my life it has value to the larger community in that PNC teaches/develops realization of the web and

interconnectedness of our social structures, and as such can
stimulate sustainability by organizations learning and subsequently feeling in supporting their community over the individual; cooperation over survival of the fittest. What I am trying to say is that to exist as an individual, family, community or nation, in my life I need to connect with integrity with the larger picture. PNC activities enables me to do that.

Putting aside academic life quote rhetoric, I have taught PNC activities in a business class with good results - students responding positively to the outcome and coming back for more, similar experiences." Rick R.

The PNC course has given me a very important simple life tool to work with environmental problems; an effective practical link between feelings and rational explanations of interactions with nature and people. It gave me the necessary inspiration, the will to share as an individual and a teacher my profound love and respect for the good life. As a scientist I use it for a more ecological aspect in my research. It has improved my health in ways I could not have foreseen. It is easier, simpler and more effective than meditation for me. Most important I have gained a very valuable gift from Michael Cohen's ecopsychology course, one that I had lost a long time ago about the tragic global planetary situation: HOPE...

"I was in a supervisory role with a young woman, in a "back to work"
job training program. She was in continual conflict with her peers and had just had a verbal match with a community member. This had come to the attention of the top administrator, who had full intentions of " firing" this young woman. I requested 30 minutes with the woman in order to prepare her. (I anticipated the result of the meeting with the administrator, would leave this young woman with "nothing to lose" and would then reinforce her unworthiness." I was given only 10 minutes. I wondered what I could tell her that would help her through what was to be a challenging meeting. My objective was to get her to stay calm and leave with dignity. I had ten minutes and not enough time. Instead of using words I decided to try an exercise from Michael Cohen's course. In that very short time the young women was able to receive some guidance through her connection to a rock. Her awareness of he own nature and her choices. I introduced the activity and we did it together.. Then she went in to face the "fire" and came out smiling and still holding her job. I asked her how she managed to keep her temper and her job. She pulled the rock from her pocket showing me, one side was rough the other smooth. She told me "I kept the rough side hidden." "I was moving a great distance from my 15 year old son. I was very concerned that I was mistaken in my decision to leave him with his father (we were separated some years before) I did an activity to determine where my son was "at", with this circumstance. I discovered so much in the 1/2 hour we shared. It was about me as a mother. I became aware as we progressed through the

activity, how ready he was for this separation and how tightly I clung to my role of mother. My son was ready for the next phase, a phase his father was ready and able to provide. I had to let go. I am glad I did." Judy M.

Organizing workshops has allowed my 13-year-old son to be part of a community of people who actively care about and value the natural world. Through PNC workshop monies, he got to help raise money for a wildlife crisis center which I feel was empowering for him. Similarly, through organizing these RWN workshops I became closer to my own family and made new friends who live nearby me but I had never met before. Many of us stay in contact now on a semi-weekly basis, continuing that feeling of community and further modeling community building and nature-connecting life style for my son. Additionally, I felt a feeling of happiness that I could be giving back to Nature and supporting the Earth in by making PNC methods available to others. This gives me good feelings because the Earth is so generous with me all the time (for example by providing air, water, sunlight, food as well as unconditional acceptance, etc.). These meaning of life methods allow people to receive and to give back to Nature and thus reestablish the web of connections we were designed to function optimally within. Sea G.

"I have been using PNC in my personal and surreal life as well as with students at risk in an alternative high school for over 5 years. I have obtained over $30,000 in grants

and have obtained very positive and sound results using PNC with these students. I have just completed an exhaustive review of the literature in the ecology, environmental science and ecopsychology fields. I am dismayed by the fact that so few writers have any concept of specific solutions to our societies' disconnection from nature and the resultant destruction of our biosphere. Michael Cohen is one of the few who has a simple life model that works. It appears simple, but it is not. It requires some major shifts in perception. I have spent over a year studying with Michael in an in person small group structure and I have taken and continue to take Michael's internet PNC courses. Both have been invaluable. Although the internet course is in an individual and written format, my group members have also become my teachers. Michael answers all calls and is always available if we stray or need help. As shown by life quotes from his students, the NatureConnect model is revolutionary and what the planet needs. Michael also walks his talk. He continually opens his 53 senses as he sleeps outside year-round surrounded by the natural sounds and senses of the night." Kurt D.

PNC has helped me take responsibility for my all my life and the choices I make in a way the makes sense. I experience profound well-being and security I never thought would be available to me. It quite literally has changed my life by bringing me to the good life. Vicki S.

"I have shared many of the points and experiences with others. I believe that as this world grows towards a total technological world there must be a counter balance. A natural world that is not forgotten. With the many moves towards interactive TV. computers and software, Mother Nature is the greatest interactive life style action we will ever take. Something I learned is that, Balance and Harmony are not only a place to be, but also an action to take." Rick D.

I have been a Type 1 insulin dependent diabetic for 38 years. Every 3 months I have an A1C test which tells me what my overall diabetic control has been like for the previous 3 to 4 months. During the period between March and June 1994, I was very much involved in doing the activities created by Mike Cohen to help us re-connect with nature, and I was also working hard to co-ordinate an Ecopsychology workshop in the San Francisco area. Although organizing the workshop was stressful, each day I would go to a park, or just into my little backyard, and for a short time I would just connect with the trees, birds, clouds, flowers, and my own internal peace, and I would end up giggling, or singing, or relaxing,. and definitely feeling refreshed and wonderfully alive. Because I was not doing my normal diabetic routine of exercising as much as I should, I was worried about the A1C test results in July. To my delight, the test results showed a significant drop in my overall blood sugar levels over the previous 3 months!! I attribute

this to the major increase in my sense of peace, relaxation, well-being, and even support that I get from connecting with the natural world. Presently, in my life I combine exercise, healthy eating, and most importantly, daily reconnecting with nature to keep my diabetes in very good control, and thereby greatly reducing my risks for serious complications in the future.

The other major thing that my connection with nature has done, over the past 2 years, is completely alleviate my use of drugs for the control of anxiety disorder. I am forwarding here a copy of part of a letter I wrote in regards to this.

"In 1983 I was diagnosed with panic disorder, a severe form of endogenous anxiety. For 2 years I suffered extremely bizarre and disconcerting physical and emotional symptoms, including depersonalization, agoraphobia, nausea, dizziness, headaches, and a disabling fear of impending death. My treatment consisted of addictive medication, psychotherapy, and a hard-line approach called voice fighting. While I no longer suffer from constant attacks, I am occasionally bothered by some of these same unpleasant feelings. In the nature connecting activities offered through Applied Ecopsychology, I have made an astounding discovery. For me, connecting with nature within and around me definitely dissolves the more mild forms of panic/anxiety attack symptoms and fears. By enabling me to fully sense my natural affinities toward stability and peace, the connecting experience endows me with feelings of wholeness, wisdom, and a sense of my rightful flow towards profound well being. Statistics indicate that 10

million Americans suffer from some form of endogenous anxiety, with recent studies revealing that more children in the teenage years are now affected by this disease. 100,000 of these people are severely disabled, unable to leave their homes, unable to walk to their mailboxes, unable to fully live. In my experience, panic/anxiety attacks disconnect me from support, safety, love, and peace; using the Applied Ecopsychology nature connecting activities positively reconnects me with these senses and feelings, as well as the senses of nurturing calmness, emotional stability and well-being, trust, empowerment, and self-esteem. The very senses and feelings that are stripped from panic attack sufferers are re-awakened and reinforced by using these nature connecting activities."

In addition to the above, my connections with nature have also given me 2 very precious gifts: The gift of trustable supportive friendships, and the simple life gift of laughter!!! My sense of fun and playfulness has increased tenfold, and I have discovered what many have said before, that laughter is a most powerful tool for healing just about anything. Reconnecting with nature has awakened in me the feelings of fun, peace, love, joy, support, and vibrant good life that I believe we all deserve." Linda C.

My involvement with PNC has brought meaning of life hope that something (The exercises in PNC) CAN be done by ordinary people, in ordinary circumstances that can and will help turn around our behavior toward the ecological sustainability issue that we

are facing. It is a way to sensitize without criticizing people's relationships with themselves, each other, and all life forms with which we share the resources on this planet. I believe that as we let down more of our barriers to feeling how we feel in regard to the current ecological situation, we will make the changes we need to make. PNC activities enable a person to allow those barriers to gently dissolve as they connect with the forms of nature around them. Johanna J.

"The most important help I have received in my life is in my practice of quieting my mind enough when I am outdoors to be receptive to what in nature is calling to me at that moment. As I follow the attraction and attune myself to the energy, the energy within my body becomes more balanced, my emotions become more tranquil, and a feeling of thankfulness flows from my heart. This practice has become an essential ingredient in my meditation practices that put me in touch with the consciousness of healing and wholeness." Mark B.

PNC activities have influenced every aspect of all my life in a very positive way. I feel more confident, more relaxed, more healthy and happy. I feel I have found a greater capacity to love myself and others. In the past I was often very pessimistic and depressed and fond of complaining. Now, I feel more empowered and optimistic. I find joy and many simple attractive life style pleasures each day. I have let go of a dismal,

materialistic downward spiral, and have spread my wings to fly up on a wonderfully positive natural thermal. I feel high on life. I gain new insights and challenges as I climb. I am now able to let nature's infinite wisdom flow through me to share with others who are attracted to it. Heidi W.

"Reading about others' experiences reinforces my view that the environment has a strong influence on defining who we are as individuals and as a people. Positive environmental experiences produce positive-minded people. PNC appears to bring individuals into positive relationships. Research printed in environmental education journals I have read indicate that programs like PNC are the best way for individuals to adopt good life styles that reduce our impact on the environment." David G.

PNC is unique in that it offers guidelines to live by that have not been interpreted (or mis-interpreted) by humankind. What I see in nature is also within me and I KNOW and TRUST that totally. I am a ministerial student, and PNC has become such a deeply ingrained part of me that in my life it will surely be a large part of my ministry. PNC teaches that all of nature is based upon attraction (love); it teaches there is no judgment in nature; it teaches connections with the total of our senses rather than in some limited intellectual way; it teaches that nature exists in the moment; and it teaches that there are no negatives in nature. These, and many more simple life facts, are parallel to

spiritual principles, and I trust them. I recommend PNC for anyone,
and I will be sharing it with others throughout my life. Jim S.

"PNC causes me to pause and reflect on the world around me. To slow down, listen and feel when before I would only look. It solidified certain ideas I had learned intellectually about interconnectedness of all life. I feel I have become more sensitive to certain practical things around the house, like recycling, water usage, habitat destruction on my own property and use of electricity.. I had done much personal self-work before doing PNC so I felt good about myself already -- but not as connected to nature. I can see how this would help others to do the same work, especially in groups. I also have more desire to be outside and enjoy the outdoors than ever, particularly at night -- which seems to be prohibited by many things in our culture. Maggie S.

My initial interest was kindled by both a professional interest in nature-based therapeutic methods but more importantly by my personal interest in spiritual matters particularly those related to nature and the spirit of nature.
Personally my interest was driven by a crisis in my personal recovery from the addictive use of various chemical substances. As a direct result of my application of PNC methods to my daily life, I find my personal recovery has become significantly more stable. Also my recovery is more sustainable now because it is less dependent on any

particular model of recovery. In essence my ongoing recovery was
made possible through the reliable and trustable methods of PNC that on a moment-to-moment basis allowed me to be in conscious contact with the nameless intelligence and wisdom of nature.

Professionally I have used variants of these methods in my work as a mental health nurse with people of all ages to focus more on the here and now of the moment and less on often destructive stories that reside in their minds. It helps these people to become aware that these stories are not actually present in nature unless they decide to actualize those stories by acting them out. I also use PNC methods in the marketing of my professional services. I often talk of my marketing efforts as "growth through natural attractions." Steve S.

"Taking the course validated my precious experiences of connection with nature which has helped to make them a more frequent and influential part of my life. I also learned a lot about people, both good news and bad news, and how to relate to them and which ones to avoid. This latter was learned through the correspondence. One can learn something useful about the meaning of life even from negative people.

My strong positive connection with nature helped me turn sarcasm into a learning experience, i.e. turn it into a G-G. experience: How to spot non-G.G. people on line early and avoid/defuse them. Emmon B.

The PNC experience helped me improve:

-my personal good life by being conscious of my personal sensory functioning

-my relationship with the environment. By being aware of it as a community not as a resource

-my professional life by specifically looking for natural area to practice my job.

The PNC experience motivated me to help others build responsible relationships and life styles because it's a pleasant, constructive and peaceful experience. It enabled me to bring environmental concepts into my consciousness that I have always felt but could not verbalize by learning first to love Nature. I had a true and personal experience that helped me to be aware of my true deep and fundamental nature. It's a way of living and thinking that brings wellness and peace. Now I know what I want and I don't feel aggravated by people anymore. Nature is now my personal guide. When I want to take a decision I go into nature and it helps me to find the best. New respect for the living global community is a by-product of the PNC program. Frank B.

I've gotten myself so messed up by being disconnected from something I never even knew I was supposed to be connected to. I literally almost died twice from buying into the world's stories. I truly feel that PNC is my road back to health, sanity and living a life

of joy. I was filling the nature-separated void in my life with all the wrong fixes, but PNC has given me the key to real life again. Theresa K.

The awakened consciousness interacts with surroundings in a responsible way---from the heart--and always with Hope. In moving (through PNC) to a deeper understanding of the pure potential we can create for others in a world clearly in need of an understanding of responsible action, we can become catalysts, through education, for the support and nurturance of Nature, the living global community and Earth Mother herself. With even just a thimbleful of courage we can reconnect with our innate capacity to heal ourselves and honor life and 'all of our relations' including the great forests the rivers and seas: the mountains and eagles and whales and deer and little lichens and four-leaf clover... and rejoice in rainbows and dance in moonlight and sing together by campfires as we seep out under the stars and as a human species finally come into our wisdom phase---" Jane-Anne N.

PNC is awesome!! You have totally changed my life, as I think there may be a place for me in this Universe now. Before I learned of your project, I thought my life was doomed to bureaucratic meanderings...looking for something real. Well, it is real, and I have found it. I have always been very connected to the earth and nature, and now know that

this is a simple life gift, and that I can teach others about this incredible relationship. Thank you, thank you, thank you, thank you!!!!!!!!!!!!!!!!!
Shelly B.

I have struggled for years with the apparent arbitrary baseline I've found in most helping disciplines. PNC offers a dependable counselor, Nature, which applies the same qualitative perspective at all times, and is always available. Will G.

"Nine years ago I had a roller-skating accident which left me with daily headaches. I had to give up my (well paid) job since I could no longer concentrate for longer periods of time. In addition I have short term memory problems. The final diagnoses were whiplash/ nerve damage in the neck. I have had several operations to severe (?) blocked nerves. (the nerves are heated with a long needle to about 90 degrees (Celsius) which kills them) The operation was somewhat successful, the pain became bearable. The years following the operation I found it difficult to cope with pain and my limitations. Work had always given me a sense of fulfillment and self-esteem, without it, I felt disoriented. There’s a saying among people with frequent pain that states: one third of the pain is real pain, one third is the fear of tomorrow's pain one third is depression caused by your new limitations and loss of dreams.

Losing your dreams is something that happens to everyone at one time or another. You have to give up you dream of becoming a pop star if you over thirty. The same with becoming a top athlete. When you suffer from chronic pain you have to go through this process in just a few years. You become aware of a pile of dreams you had stashed away in your subconscious. The same with me, in my life I became or made myself socially isolated, because I felt no longer part of "the healthy world". Connecting to Nature has pulled me out of this negative spiral. It didn't make any sense to me at first, but somehow I kept rereading it. I decided to partake in the course and became very involved. After several weeks of doing PNC activities I noticed that my headaches were becoming less intense. The exercises of Connecting to Nature came as a great relief after reading dozens of self-improvement books. Somehow all of these books left me dissatisfied. The insights you get from reading alone do not create a lasting change. Reading and doing exercises simultaneously is much more effective for me. I now have a storehouse of wonderful memories to go back to. Being an indoor person I experienced the beauty of nature almost as a shock. I had spent time in nature before but had never before communicated with its beauty and variety. I now have great fun discovering new life style ways to perceive new aspects of what I see. I have learned that there hundreds of ways to recognize and appreciate my natural origins. Connecting to nature has a profound simple life healing effect on me in my life. The PNC activities have taught me that I do not have to hold a prestigious job to be a person

of value. Value is something that life created in me; I don't have to earn it. All I have to do is perceive it, connect to it and celebrate it. Breath is an exchange of internal and external value. Walking is an encounter with my origin and home. Seeing is perceiving and reflecting what created me.

Connecting to nature also made me aware of how fragile my life is and how important it is to nurture my environment; my family, my friends and how everything I do for them reflects back on myself. The more I learn, the stronger the feeling that all life is one becomes a tangible reality. Thanks to the nature connect exercises I have developed a stronger sense of responsibility for my own health. The inter relatedness of all life outside myself has made very clear to me that a loving and nurturing attitude towards my own body is vital. To put it less abstract; it feels good to take care of myself and my body responds with vitality to the attention I give it. Nature also taught me how relatively unimportant my place is in the whole of life. My education has equipped me with an over inflated ego. I am supposed to be superior to other life forms, I am not. Spending time in nature has taught me that I am relatively unimportant and that I have every reason to be modest. I can only live in very protected circumstances: 21% oxygen, a limited temperature range, enough sunlight, regular food intake with just the right amount of minerals and vitamins, not too much noise, etc. If you add the psychological requirement like safety, a feeling of belonging identity then the list would easily become two pages long. Much of the pain in my relationships to other people starts when I forget

how fragile the other person really is. Much of the pain in our culture
is the result of acting as if we, as a species, are independent and all important. I enjoy doing the exercises with my son. I remember an early spring morning we spend in the woods together: I asked him to find a tree that attracted him. After a few moments he came back all excited: "Look daddy I found two trees that are just like you and me". He had found a small tree his size and a bigger tree my size. I then suggested we should imitate the trees to see what it would be like to be a tree. So together we stood there with our arms outstretched enjoyed the warm sun. At first only the two of us were there but very soon somehow the trees joined in and the four of us enjoyed being alive and being nurtured by the sun. This and other memories have become very precious to me. Most everything outdoors has a strong living presence, a meaning of life that's very contagious. The living indoors life style mutes my senses; habits take the fun and challenge out of life. Outdoors everything changes continually with amazing grace and strength. That is something that inspires me deeply. It's much like befriending a very enthusiastic person. The friendship intensifies your own aliveness and communication skills. Befriending nature to me is an even more rewarding experience; it also creates a feeling of belonging and a new sense of knowledge about my origins: my eyes developed as a response to the existence of light, my lungs respond to the oxygen the trees and plant synthesize.Inspiration to me is a dance for two. Music means nothing when I am unable to open up to it. If I I'm blind, colors don't exist. As my senses open

up wider to nature, the scoop of what I see and feel widens, the
intensity of life outside infuses my own aliveness. I think it is a miracle that a development process of 5 billion years has equipped me with all the senses I need to perceive this world and a strong sense of survival that enables me to have children that will be able to enjoy our world in the future. That is, if I leave them something to live in. I've feel I just started on a long a very interesting simple life journey. I think the insight that connecting to nature has to offer are of great importance to many people. I also understand that the ideas of PNC will be difficult to understand for many people as they point in a direction which is radically different from the mainstream thinking in our society. But to quote Victor Hugo; "Nothing is stronger than an idea whose time has come". Gert B.

In March 1997 seventeen NatureConnectors met at Friday Harbor, San Juan Island, Washington. Though some had met in person previously, I had met most of the people only by correspondence on-line in PNC courses. The attractions among us were instantaneous. Not only did we think beautifully, we were physically beautiful as well. The instantaneous connection we made was a memorable occasion I will never forget. Kini Jane J.

Basically, I have changed from a victim to, not only a survivor, but to fullness. I don't know how to put this exactly. This fullness is a feeling of connectedness with all, which brings contentment.

Whereas before I was so unsure of whom I was, I now feel a confidence in my being that I have been through psychotherapy for years trying to find.

Whereas before I was fearful of many, many things, but people more than anything else, in my life I now am able to feel a more solid, yet joyful pleasure in the community I find myself a part of. Not that I never fear anymore, but I am able to hold fear rather than having it engulf me.

Whereas my marriage was unsteady, I now can deal with the differences between us with trust and love, and I find that my husband has been able to express himself in more insightful ways to this "new" partner I've become.

Whereas before I was a reclusive personality when not at work, I now am more interested in the world around me. I am more able to see the good that I thought was nonexistent.

Whereas before I had meager trust issues, I now seem to be more able to trust my attractions and repulsions as basic sense awareness. Leaving judgment of others and myself out of my decision-making process sure lightens the load.

This may sound too good to be true. I can hardly believe what has happened in my life in only a few short weeks. Not that I have become "that perfection" I have so exhaustingly striven for, because I have much more to learn and, even more, to apply, but my life style and living is just easier and more fun when I don't feel the pressures I once put on myself and everyone around me. Besides that, I am now more aware of my perfection in the flow of what is. Judi M.

"The basic concept of helping people connects with nature within and around themselves is beyond monetary value. A conscious connection with all creation will change the world. PNC is one way to do that." Linda and Jake K.

I think our society's disconnection is both in people's personal relationships and how they react to the environment is devastating. PNC acts as a tool to mend both. It is unique in that it addresses human psychology as a part of nature that needs mending. It has helped me release stress and I find that it teaches me much that helps me in my dealings with other people and understanding aspects of myself. It is very powerful work and I have seen it help people appreciate more. We can't do enough of this kind of work, it is badly needed. We need to teach it to people in all disciplines to effect social change through personal change. Mira F.

"I find that I apply may of the things I have learned from Dr. Cohen's Reconnecting With Nature program on a daily basis with my wife, children, friends, associates, clients public and private organizations; not to mention how often I use what I have learned to maintain my own health.

It is a given among leading environmental educators, sociologists and anthropologists that many, if not most, of our personal, social and environmental problems are directly related to modern society's disconnection from nature. Virtually all agree that Reconnecting with Nature is fundamental, if not critical, to correcting the problems that seriously threaten our very survival.

Dr. Steve Van Metre and many other prominent environmental educators have eloquently pointed out that most environmental programs are not accomplishing what is needed because they lack the fundamental elements to achieve this critical objective. While other programs may recognize the need for man: to reconnect with nature, ' Dr. Cohen's program is the only one I have found in 10 years of searching that actually show you how. It is not something schools and universities should be thinking about offering...it should be an absolute requirement. “Bill B.

"I have always in my life had hope because I have never lost my natural connections. PNC has allowed me to refine the concepts, communicate them to others and commune with others who share my feelings. My feelings that natural connections were the

sustaining forces of all my life led me to leave a career as a practicing psychologist over 10 years ago and become a landscape contractor. This allows me the simple life freedom to work and live out of doors." Jan G.

"Going outside and touching a tree or plant relieves anxiety. Touching the oak outside my house gives me an astonishing feeling of friendship. Being outside in a lovely spot (my back yard) helped me overcome along-seated caffeine addiction."
Elisabeth R.

APPENDIX J: PNC Participant Survey Results

PARTICIPATION

Out of 122 past alternative natural cures, healing, and therapy participants who had taken, but not necessarily completed the course, 101 had intact e-mail addresses and were sent the survey without being given previous notice or asking for their consent to participate in it. 48 participants responded. Phone calls to others available showed these 48 represented the responses of approximately 88% of those who completed the program of nature courses degrees and grants online.

RESULTS

Presented below are the averages of all responses received from persons who had completed the accredited Project Nature Connect (PNC) 30 day Natural Systems Thinking Process (NSTP) internet distant learning courses "Psychological Elements of Global Citizenship" Orientation Course for alternative natural therapy, healing and cures; and/or "Educating and Counseling With Nature" within the previous three years. They represent 37 different occupations/professions, many nationalities and ages 22-55 who were involved in nature courses degrees and grants online.

The participants responded on a 1-10 measurement of agreement to statements about the NSTP alternative natural cures, healing and therapy course and its effects. Below, 1. shows how the statements were answered and recorded. For brevity, the

remainder of the statements (2-13) only convey the measurement number (in red) to the nearest decimal.

NSTP was taught in conjunction with Project NatureConnect (PNC) and the survey used the PNC acronym when alluding to the alternative natural cures, healing and therapy process.

1. (9.8) The PNC experience helped me improve my personal life.

Strongly agree Don't know Strongly disagree

10 x 9 8 7 6 5 3 2 1

2. (9.4) The PNC experience helped me improve my relationship with the environment.

3. (9.0) The PNC experience helped me improve my professional life.

4. (9.6) Significant positive change would occur if a large segment of the population became involved in the PNC process.

5. (9.2) The PNC experience motivated me to help others build responsible relationships.

6. (9.0) The PNC process enabled me to bring environmental concepts into my consciousness that I have always felt but could not verbalize.

7. (8.0) The PNC experience helped me view and relate to children more positively.

8. (8.0) If a job opening appeared that involved teaching or promoting PNC, I would select it over my present occupation even if it meant more work or less money.

9. (8.7) The PNC experience gave me hope for the future that I did not previously hold.

10. (9.5) PNC is a process that every person in our society must learn if we are to reverse our present destructive ways.

11. (9.4) PNC is an effective vehicle to bring about personal and global peace.

12. (9.3) I would recommend students in any discipline to take a PNC course.

13. (9.3) PNC enters and influences my thinking and relationships daily.