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Quality of life and social capital in sustainable intentional communities

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QUALITY OF LIFE AND SOCIAL CAPITAL
IN SUSTAINABLE INTENTIONAL COMMUNITIES

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Abstract

Members of eco-communities have reported high levels of both Quality of Life and Social Capital, while at the same time, living in a way that is in harmony with the environment. Quality of Life scores indicate residents' level of well-being on a community level, and Social Capital scores indicate the degree of harmonious interactions among fellow community members. The information gathered from this research is useful in understanding contemporary society's way of living and interacting with each other and the world. From the eco-community model, we may be able to incorporate more sustainable ways of living into current society without having to suffer from a reduced Quality of Life. The evidence has indicated that an attitude shift is in order – an attitude that places less emphasis on built capital and more emphasis on social and natural capital. In other words, interactions with friends, family, neighbors, and the environment should be valued more highly than having access to or owning goods and services and receiving a high income. From this, we can retain a high Quality of Life, and its associated emotional well-being and mental health benefits, while reducing the reliance on material consumption, along with its associated wastefulness and environmental destruction. Sustainable development and sustainable living practices can be incorporated into mainstream society based on the eco-community model. This will hopefully avert a crisis in energy consumption, and ultimately improve the good of all.

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Chapter One: Introduction

Intentional communities are formed when people chose to live with or near each other in order to carry out a shared lifestyle, with a shared culture and with a common purpose (Metcalf, 2004). Worldwide, intentional communities are gaining in popularity and numbers of people living there have been increasing rapidly in the last several years (Fellowship for Intentional Community, 1994). An ecovillage is one type of intentional community, where residents decide to live and work collectively, based on shared environmental beliefs and practices. Ecovillages work towards attaining complete sustainability in terms of food and energy – relying on "permaculture" techniques and renewable energy sources. Cohousing communities are another type of intentional community, similar to townhouses with a central communal building. Cohousing communities place an emphasis on reducing their consumption of goods by sharing resources with other community members. In this study, questionnaires will be administered to residents/members of ecovillages and cohousing communities in order to gain an understanding of their perceptions about what it is like to live there. Together, these two types of communities will be referred to as "eco-communities".

In a recent study by Mulder, Costanza, and Erickson (2005), a survey was administered to intentional community residents, investigating the status of four basic types of capital, and their effects on residents' perceived quality of life. They are as follows: 1) *built capital* – purchased and rented goods, income; 2) *human capital* – investments in personal, education, and healthcare; 3) *social capital* – community interactions, friends, and family, and 4) *natural capital* – interactions with natural spaces.

The results indicated that intentional communities have a better balance between built, human, social, and natural capital than unintentional communities, and this contributes to residents' higher self-reported quality of life. Within intentional communities, a higher importance is placed on social capital, substituting for and reducing the importance of built capital. In other words, interactions with community, friends, and family are considered more important than owning goods or receiving a high income. This means that a higher quality of life is reported by intentional community residents, despite lower levels of material consumption, as compared to the control group (survey administered to neighborhoods in Burlington, VT, USA).

Based on the findings of Mulder, Costanza, and Erickson's (2005) study, it is quite possible that the status of social capital and quality of life in eco-communities is similar to that of other intentional communities. Eco-communities demonstrate a higher importance placed on sustainability and energy-efficiency than other types of intentional communities in general. From this, it seems plausible that eco-communities may exhibit a lower importance placed on built capital, and a higher emphasis on social and natural capital. As the world is being faced with a sustainability crisis (Global Footprint Network, 2009) and dwindling supplies of non-renewable energy sources (Hopkins, 2008), it is important for humans to find new ways of living that retain a high quality of life while consuming fewer resources. Since eco-communities have already demonstrated that their way of living is less reliant on energy consumption, it is worth investigating if their quality of life is comparable to those living in non-intentional communities.

Along with measures of quality of life, other factors under investigation are the perceived importance of cognitive social capital among eco-community residents.

Cognitive social capital is one aspect of social capital, which is similar to the idea of "sense of community". It includes the variables of solidarity, trust, and conflict resolution. Social capital and quality of life are both indicators of individual mental/emotional well-being in general (Perkins and Long, 2002). From the self-report measures administered in this study, it will be determined if residents of eco-communities are able to maintain a high quality of life while living in a community that emphasizes interpersonal relationships and interactions with natural spaces over consumption of material resources. Eco-communities that indicate a high level of cognitive social capital will have demonstrated the necessary building blocks for a strong community that will last over time (Grootaert & Van Bastelaer, 2002). For these reasons, eco-communities could be seen as demonstrating sustainable living practices, as well as being sustainable as communities of the future.

What are the levels of quality of life and cognitive social capital in eco-communities? This study has indicated that eco-community residents/members report a quality of life that is higher than residents of non-intentional communities, along with a high degree of cognitive social capital. Quality of life results depict residents' level of well-being on a community level, and cognitive social capital results indicate the degree of harmonious interactions among fellow community members. Results have been interpreted in order to elucidate the relationships between these variables and present an overall picture of well-being among eco-community residents within the context of a sustainable living environment. Members of eco-communities have reported high levels of both quality of life and cognitive social capital, while at the same time, living in a way that is more in harmony with the environment than mainstream communities.

Chapter Two begins with a brief description of the field of Counselling Psychology, as it applies to this research. The focus is on theories of mental health that understand the individual as existing within, and being shaped by, a larger social system. From this, an understanding of individual wellness emerges, extending into an explanation of the concept of quality of life, which exists on a community level. The next section, Community Psychology, depicts healthy communities, and the forces that influence them. In this section, topics include: the concepts of psychological sense of community and social capital, and the effects of post-industrialization on communities. These ideas are discussed with respect to their impacts on mental wellness. Next, issues of social, environmental, and economic sustainability are discussed, including the topics of: ecological footprint, energy crisis, climate change, water shortages, the free market economy, the limits to growth, and re-thinking wealth. Following this is a look at eco-communities, including descriptions of the terms intentional community, eco-village, and cohousing community. The history and current status of such communities is provided, in addition to a rationale for studying them. The topic of sustainability within eco-communities describes how eco-communities have formed their lifestyles with issues of sustainability in mind – actively developing and implementing solutions to these problems. Finally, an integration of these ideas ties together the common threads between individual and community wellness, sustainability, and eco-communities.

Chapter Three describes the methods that were used in this study, including participants, materials, procedures, and methods of analysis. The materials used were the World Health Organization Quality of Life Survey – Brief (WHOQOL-BREF), and the World Bank Social Capital Assessment Tool – Adapted version. These instruments are

described, including their reliability, validity, and biases. Methods of analysis consisted

of scoring items from the surveys, and then using Microsoft Excel and Statistical Package

for the Social Sciences (SPSS) for data entry, analysis, and graphing of the results.

Chapter Four presents the results of the current study, along with an interpretation of the

findings. Chapter Five discusses the findings in relation to previous research on the topics

of sustainable development, sustainable living practices, social change and the future of

community. Limitations of the present study and suggestions for future research are

outlined, followed by the conclusion.

Chapter Two: Literature Review

Health and Wellness

Counselling psychology and psychotherapy are fields of practice that rely heavily on both theory and research. The scope of this knowledge is vast, yet all of it is oriented around the concepts of health and wellness – with the purpose of helping individuals to achieve a state of happiness and well-being. In order to understand the topic of health and wellness as it applies to this study, various theories of mental health are discussed, with a strong focus on Adlerian *Individual Psychology.* Individual psychology provides a solid foundation of understanding the individual in relation to his or her environment. The idea of individual wellness is explored and defined – looking at what it takes to be a happy and healthy person. Beyond the individual, "quality of life" exists on a larger scale, creating a reflection of the health and wellness of individuals in community.

Theories of Mental Health

Alfred Adler was one of the earliest and most influential pioneers in the field of psychotherapy. According to his approach (Mosak & Maniacci, 2005), termed *Individual Psychology*, the person is viewed holistically, as a creative and responsible individual moving towards his or her goals within the phenomenal field in which he or she exists. Adler advocated for the study of the whole person and how he or she moves through life. This is in opposition to other theories that attempt to study only parts of the human psyche, often leaving out the social context in which that person exists. From this perspective, dualistic notions of *mind* and *body*, or *conscious* and *unconscious*, are merely subjective experiences of the whole person, and are of secondary importance to the individual's goals, lifestyle, and worldview. Therefore, it is the individual's

subjective point of view that is the major tool used in understanding him or her as a person. As Adler wrote, "We must be able to see with his eyes and listen with his ears" (1931/1958, p. 72).

One of the basic tenets of Adlerian theory is that all behaviour occurs in a social context (Mosak & Maniacci, 2005). Humans are a part of the environment in which they are born into, and thus, cannot be studied apart from these conditions. Although he termed his approach "Individual Psychology", Adler believed that interpersonal functioning is an extremely valuable part of healthy psychological development. He emphasized the importance of the individual feeling as though he or she is a part of a larger social whole. This is Adler's concept of "social interest", in which the individual striving for self-realization contributes to society by attempting to make the world a better place to live. In this way, individuals may choose socially useful goals or they may devote themselves to the useless side of life, neurotically concerning themselves with their own superiority.

From this view, "psychopathology" and "mental illness" are merely names that do not do much to explain the cause of a disturbance. Instead of being viewed as sick or abnormal, such people have not fully developed the necessary skills or they have lost their courage with respect to meeting life's tasks. The focus of therapy is to encourage individuals to find and engage their social interest for the purpose of contributing to the creation of a better society (Mosak & Maniacci, 2005). Tremendous value is placed on the individual in relation to society – how well he or she is able to adapt and fit in to the social environment will, in a large part, determine that individual's mental wellness.

There are other theories within the field of psychology that support Adler's views. For example, Gestalt Therapy (Yontef & Jacobs, 2005), along with the majority of humanistic theories, also attempt to view the person holistically within his or her environment. Feminist Therapy understands the person within his or her social context, incorporating the importance of socialization and gender roles on personality development (Herlihy and Corey, 2001). Family Therapy views the individual as one part of a family unit, and thus, individual disturbance is an indicator of dysfunctional patterns of relating within the family system as a whole (Goldenberg & Goldenberg, 2005). Theories such as these explicitly link the individual to his or her social context. This is particularly relevant to an exploration of individuals living in intentional communities, and the effects of their social environment on levels of well-being.

Individual Wellness

The various theories advocating for a holistic view of the person would suggest that human development and subsequent mental health both seem to be based on a variety of interconnecting factors. Individuals cannot be viewed in isolation from their social environment, including the family unit and societal context in which they exist. These external forces play a dynamic role in shaping the individual and influencing his or her mental wellness. In addition, the individual is expected to contribute something good in return to their community, as in Adler's concept of "social interest". Closely related to this is the concept of *psychological sense of community,* which is an individual's feeling that he or she is an integral part of the community in which he or she lives (Sarason, 1974). The way in which an individual conceptualizes fitting in to this larger social

context will have a definite impact on that individual's perception of his or her level of wellness.

Individual wellness refers to an individual's physical and psychological health, including the presence of social-emotional coping skills to maintain that health. It goes beyond the minimal criteria of health to include subjective emotional well-being, development of identity, and attainment of personal goals, such as academic achievement or pursuit of spiritual meaning (Dalton, Elias, & Wandersman, 2001). Healthy functioning is exhibited by individuals who are, for the most part, happy with themselves and their lives. The individual's own perception of how well he or she is functioning is highly relevant. Here, the idea of self-concept is important, since individuals should understand themselves to be likable, competent, and worthy of respect. Healthy functioning is demonstrated by people who understand and express their emotions in a productive way, realize they have the freedom to make conscious choices about how they would like to be, and take responsibility for their choices and actions. The abilities of coping with stress, adapting to change, getting along with others to a certain degree, and being genuine and authentic as a person, are also signs of healthy functioning.

The pinnacle of healthy functioning is exhibited by people who have lived up to their highest potential and who have accepted and integrated all aspects of their personalities; in other words, they have achieved self-actualization and wholeness. These are concepts put forth by Rogerian and Gestalt therapists (Raskin, Rogers, & Witty, 2005; Yontef & Jacobs, 2005), and others in the humanistic tradition. Thus, a well-rounded and holistic perspective of health includes the integration of physical, mental, emotional, spiritual, social, and environmental dimensions.

Subjective emotional well-being. Emotional well-being is an important aspect of an individual's overall mental wellness. *Subjective emotional well-being* consists of an individual's evaluation of his or her own life. It includes affective components such as frequency and intensity of pleasant versus unpleasant emotions, as well as cognitive components such as satisfaction with one's life or job (Diener & Lucas, 2000).

Research on subjective emotional well-being supports the idea that individual wellness is highly related to how that individual fits in to his or her surrounding social context and environment. Elements of subjective emotional well-being have been correlated with elements of social capital (Helliwell, 2003). For instance, the variable of trust, exhibited by communities with high levels of social capital, has been shown to have a positive effect on subjective emotional well-being. As well, research has indicated that individuals who are more involved in their communities are also generally happier with their lives (Perkins and Long, 2002). Self-reported measures of subjective emotional well-being have also been positively correlated with a individual's perceived quality of life (Diener & Lucas, 2000). Thus, quality of life measures can be used as an indicator of an individual's subjective emotional well-being, since quality of life encompasses this element.

To clarify these inter-related factors, subjective emotional well-being is a reflection of an individual's mental wellness, and is correlated with the community-level concepts of social capital and quality of life (Diener & Lucas, 2000; Helliwell, 2003). Therefore, by measuring the latter two concepts, we can make inferences about the subjective emotional well-being and mental health of the individuals who make up those communities. For example, in a community demonstrating high levels of both social

capital and quality of life, as reported by individual community members themselves, it can be assumed that the majority of individuals will also report high levels of subjective emotional well-being, and therefore, will also demonstrate high degrees of mental health.

Since the goal of this research is to describe certain community-level factors that contribute to mental wellness, subjective emotional well-being is not measured directly. Instead it is included within the measure of quality of life, which exists on a community level.

Quality of Life

Quality of life is an important concept in this study, since it represents a holistic view of health and the overall well-being of the community that is being studied. The World Health Organization defines *quality of life* as an individual's perception of his or her position in life in the context of the culture and value systems in which he or she lives, and in relation to his or her goals, expectations, and standards. It is a broad concept, including elements of physical health, psychological state, social relationships, and relationship to the environment (Murphy, Herrman, Hawthorne, Pinzone, & Evert, 2000). Quality of life instruments are often administered to communities or specific populations, as opposed to individuals.

The domain of "psychological state" in this instrument is similar to the individual-level concept of subjective emotional well-being. The domain of "social relationships" in this instrument can be related to the concept of social capital. It has been demonstrated that subjective emotional well-being and social capital are both consistent and widely valued indicators of the quality of community life (Diener & Lucas, 2000; Helliwell, 2003), as is the concept of psychological sense of community (Perkins and Long, 2002).

Thus, quality of life measures can be used as an indicator of the individual-level concepts of psychological sense of community and subjective emotional well-being – both factors that contribute to individual health and wellness.

The goal of this study is to describe the quality of life and social capital in eco-communities. In addition, it is important to understand how these two concepts can have an impact on individual mental wellness. Since subjective emotional well-being and psychological sense of community both exist on an individual level, and are correlated with community-level concepts of social capital and quality of life, measures of social capital and quality of life both include aspects related to individual well-being. It will be assumed that the results from the measures of quality of life and social capital, obtained from self-reports of individual community members, will reflect to some degree their subjective emotional well-being and psychological sense of community, and thus will be a reflection of individual-level mental wellness.

Community Psychology

Individual wellness is considered to be one of the core values in the field of community psychology. Community psychology concerns the relationship of the individual to his or her community and society. Through research and action, community psychologists seek to understand and to enhance the quality of life for individuals, communities, and society (Dalton, Elias, & Wandersman, 2001).

Many theorists have been interested in studying communities and understanding the impact of industrialization, urbanization, and other forces in society that have an effect on individuals' wellness and quality of life. Durkheim argued that solid social ties are essential to one's overall sense of well-being (as cited by Worsley, 1987), and that the

absence of ties with family and community increases the risk of anomie and other

negative psychosocial consequences. By studying the factors that contribute to strong

communities, researchers can better understand ways in which to improve mental health

and overall quality of life – both on an individual as well as on a community level, since

it is the individuals themselves that make up a community.

What is Community?

Community refers to a general sense or feeling of belonging and being connected

to others, often with the idea that these relationships are tied to a geographical location.

Factors that contribute to the presence of a strong community include things such as

residents' participation in formal civic organizations and informal support networks,

along with a sense of security and trust among neighbors (Dalton, Elias, Wandersman,

2001). The idea of community can be conceptualized in two different ways – both on an

individual and on a collective level. The term *psychological sense of community* refers to

an individual's subjective feeling of belonging and is thus measured on an individual

level. The idea of *social capital* is a broad theory that refers to the level of cohesiveness

in the community as a whole, and is measured at a group level.

Psychological Sense of Community

As a pioneer in the field of community psychology, Seymour Sarason (1974)

emphasized the importance of studying the concept of psychological sense of community.

He saw it as the key to understanding one of society's most urgent problems - the dark

side of individualism - which has resulted in alienation, selfishness, and despair.

According to Sarason (1986), the lack of sense of community is extraordinarily frequent

and is a destructive force in our society. Preventing and dealing with the consequences of this lack is one of the main goals of community psychology.

Psychological sense of community is an individual's feeling that he or she is an integral part of the community in which he or she lives (Sarason, 1974). Sense of community consists of a group of measurable behaviours and attitudes, containing four basic elements (MacMillan & Chavis, 1986). These elements are membership, influence, the integration and fulfillment of needs, as well as a sense of shared emotional connection. *Membership* refers to a series of the interacting factors of boundaries, history, common symbols, emotional safety, and personal investment. *Influence* is an individual's perception of the power he or she has in contributing to the decisions and actions of the community. The *integration and fulfillment of needs* refers to the benefits that an individual derives from being a member of the community. *Shared emotional connection* describes the reciprocal involvement in significant events and the amount of contact that members have with each other in the community (MacMillan & Chavis, 1986). An important aspect of this concept is that residents feel they belong to a social group that assigns meaning to the physical spaces shared by the members of that group (Perkins and Long, 2002).

Social Capital

In contrast to psychological sense of community, social capital is studied at the community level, with researchers looking at group relations and investigating sense of community on a larger scale. However, psychological sense of community is one aspect of the broader concept of social capital; and they both have in common the idea that group members must feel a sense of belonging and assign meaning to the shared spaces

of the group (Perkins and Long, 2002). As previously mentioned, psychological sense of community and social capital are both consistent and widely valued indicators of quality of life within the community (Perkins and Long, 2002).

The concept of social capital has been derived from a multidisciplinary perspective, and as such, there has not been a precise and agreed upon definition. Generally, *social capital* is made up of the norms, networks, and mutual trust of a society, which facilitate cooperative action among citizens and institutions (Coleman, 1988). In other words, social capital represents the reciprocal link between individuals and their community. Another broad definition of *social capital* is the institutions, relationships, attitudes, and values that govern interactions among people and contribute to economic and social development (Grootaert & Van Bastelaer, 2002). Social capital can be measured in terms of resources plus access to those resources (Foley & Edwards, 1999). It is the process by which residents create and access social and physical resources that allow them, as a group, to form a community (Dreistadt, 2004).

There are two forms of social capital. The first, called *structural social capital*, refers to objective and externally observable social structures, such as networks, associations, and institutions, including the rules and procedures they exhibit. The second form, called *cognitive social capital*, refers to subjective and intangible elements such as generally accepted attitudes, norms of behaviour, shared values, reciprocity, and trust among community members. Three specific components of cognitive social capital include 1) solidarity, 2) trust, and 3) conflict resolution. Although these two forms of social capital mutually reinforce each other, they can also exist independently (Grootaert & Van Bastelaer, 2002).

For the purposes of this research, the focus is on cognitive social capital, since it is closely related to the concept of sense of community, measuring similar aspects on a community level. Also, by studying cognitive social capital, rather than structural social capital, the focus is on community members' attitudes as opposed to the presence of physical structures within their community. This will be more representative of the sense of community that this study aims to describe in order to make inferences about the level of mental wellness among residents of eco-communities. On top of this, most eco-communities have only recently been established or are still in the forming stages, so they may not have an adequate level of structural social capital in place to measure.

This reasoning is supported by Grootaert and Bastelaer (2002), who wrote that "the structural elements of social capital must be assessed separately from cognitive elements" (p.19). Cognitive elements predispose people towards beneficial collective action, whereas structural elements facilitate such action. Yet, both elements are important, and must be combined in the overall assessment of social capital within a community. The presence of cognitive social capital is necessary in order to establish future structural social capital, which will ultimately lead to the formation of a strong and sustainable community (Grootaert & Van Bastelaer, 2002). For this reason, the presence of cognitive social capital within a community will serve as an indicator that the community has in place the necessary building blocks that will enable it to last over time. It is important to note, however, that individuals themselves often have different ideas as to what makes a strong community.

Effects of Post-Industrialism and Urbanization

In our current society, people often base their decisions about where to live on factors such as availability of work, income level, quality and type of schools, climate, and access to stores and cultural centers. Our interactions with others are often out of necessity and economic ties, rather than purely social interactions based on shared interest or space (Dreistadt, 2004). With increasing urbanization, globalization, and a mass-market economy, North American culture is becoming more dependent on the economy and less dependent on interconnections with other people.

Social scientists have argued that these are the types of conditions that have led to diminishing social ties among people, and a diminishing sense of community as a result (Putnam, 1995). The expansion of mass culture, including increasing wealth, urban growth, and transient living patterns, has led to increasing fragmentation between people. Although people have gained greater individual freedom, the cost has been social isolation and an increasing sense of alienation (Putnam, 1995). Social scientists trace the beginning of this trend to the 1960's postindustrial era, when people began moving to cities in larger numbers (Glynn, 1986). While social scientists disagree as to the root causes of the breakdown in social interaction and community relations, as well as to the extent that this is occurring, most agree that community interaction has been challenged by a number of factors over the past half of a century (Glynn, 1986). Since then, urban and suburban planners, as well as utopian theorists, have been concerned that socio-economic conditions are suppressing meaningful interactions between people, and creating environmentally and economically unsustainable conditions (Putnam, 1995). The sustainability crisis is of central importance to this research, which aims to describe how

certain communities have attempted to create a social context that is itself sustainable, both environmentally and economically, and over time. In addition, this study will attempt to explain how these communities also serve to increase the mental wellness and overall quality of life of the individuals that live there, thus making such communities an interesting topic worthy of exploration.

Issues of Sustainability

Though more than 20 years old, the term *sustainability* is still generally defined by the Brundtland Report's famous statement of "development that meets the needs of current generations without compromising the ability of future generation to meet their own needs" (World Commission on Environment and Development, 1987, p. 23). In other words, sustainability can be conceived of as a product of a collective conversation about what kind of world we want to live in now and in the future (Robinson, 2004).

The United Nations Department of Economic and Social Affairs, Division for Sustainable Development (United Nations, 2009) states that the achievement of sustainable development requires the integration of economic, environmental, and social components at all levels, which is facilitated by continuous dialogue and action in global partnership. National Sustainable Development Strategies were outlined in Agenda 21, which is a global agenda for the transition to sustainability in the 21st century. At the 1992 United Nations Conference on Environment and Development (also known as the "Earth Summit") in Rio de Janeiro, 178 governments agreed to adopt the agenda and come up with a local agenda, adapted to their own region. Chapter eight of Agenda 21 promotes the implementation of national strategies for sustainable development with the purpose of harmonizing various economic, social, and environmental policies and plans

operating in each country. In 2002, the World Summit for Sustainable Development urged countries not only to take immediate steps to make progress in the formulation and elaboration of national strategies for sustainable development but also to begin their implementation by the year 2005 (United Nations, 2009).

The Elements of Sustainable Development

Sustainable development is a process of integrating three imperatives: (i) the ecological imperative to live within the global biophysical carrying capacity and maintain biodiversity; (ii) the social imperative to ensure the development of democratic systems of governance to effectively propagate and sustain the values that people wish to live by; and (iii) the economic imperative to ensure that basic needs are met worldwide (Dale, 2001). These three imperatives are interconnected and failure in any one area will result in the failure of the other two, especially in the long term. Conversely, the correct utilization of one imperative may multiply the effects of another in a positive, or virtuous, cycle (Dale, 2001). Research findings have determined the significance of this interconnection, particularly for small rural communities resisting the forces of rural decline (Edwards & Onyx, 2007). There is also considerable evidence that high levels of social capital may be a prerequisite for the process of integrating the ecological, the social, and economic imperatives (The World Bank Group, 2009). Therefore, social capital is an important aspect of sustainable community development.

Hamstead and Quinn (2005) conclude that in addition to the three tenets of sustainable development identified above, there are several other features important for the theory and practice of sustainable community development: (i) economic diversification and self-reliance; (ii) social justice through citizen empowerment and

improved access to information, education, and meaningful and effective participation; (iii) ecological sustainability through community-based stewardship and the minimization of all forms of consumption and waste; (iv) integration of economic, social, and ecological strategies for, and models of, well-being and change (pp. 146 – 147). It promotes strategies that foster local economic growth by building local networks of production, distribution, and consumption with minimal impact upon the natural environment. In addition, sustainable community development reinforces solidarity based upon strong bonds between local community members (Edwards and Onyx, 2007). These elements are specifically related to the development of sustainable communities, and are exhibited to a large extent in cohousing and ecovillage communities. In general, these imperatives are very similar to some of the explicitly stated goals and guiding principles of eco-communities worldwide.

Following the gathering of the United Nations at the Earth Summit in 1992, many countries engaged in their own local version of Agenda 21 (Reed & Webber, 1995). Agenda 21 demands an extensive reappraisal of systems and practices at all levels and across all spheres of society. It requires a fundamental shift in organizational culture and societal values. Agenda 21 is concerned with the development of projects, strategies, and policies that will facilitate a shift towards more sustainable modes of environmental, social, and economic development. Chapter 23 of Agenda 21 emphasizes that if sustainable development is to become a part of our social structures, full cultural participation at all levels of society is called for (Reed & Webber, 1995).

In the United Kingdom, various approaches to community participation are being piloted. The Local Government Management Board (LGMB) and local authorities in the

United Kingdom have worked together to develop "sustainability indicators" (LGMB, 1995). As a result, 13 primary themes have been identified which encompass a wide range of social, environmental, and economic indicators (Table 1). Most importantly, the development of these indicators establishes common ground and enables dialogue between local communities, all tiers of government, and other national and international organizations. This approach seeks to empower communities by helping to create the building of local democratic capacity, while at the same time enhancing equity and social justice for the people (Reed & Webber, 1995).

Table 1

Sustainability Indicators: Thirteen Major Themes (LGMB, 1995)

1. Resources are used efficiently and waste is minimized by closing cycles.
2. Pollution is limited to levels which natural systems can cope with, and without damage.
3. The diversity of nature is valued and protected.
4. Where possible, local needs are met locally.
5. Everyone has access to good food, water, shelter, and fuel at reasonable cost.
6. Everyone has the opportunity to undertake satisfying work in a diverse economy.
7. People's good health is protected by healthy environments, health services, and preventative health care.
8. Access to facilities and services is not limited to those with a car.
9. People live without fear of violence, crime, or persecution.
10. Equal access to information, skills, and knowledge.
11. All sections of the community are empowered to participate in decision-making.
12. Opportunities for culture, leisure, and recreation are readily available to all.
13. Diversity and local distinctiveness are valued and protected; settlements are human in scale and form.

The issue of sustainable development is recently being taken more seriously on behalf of our world governments. There are several countries in the world that are far ahead of Canada in terms of integrating the imperatives of environmental, economic, and social sustainability into their new developments (Global Footprint Network, 2009). However, there are several sustainable community developments in Canada, with the majority of them located in the provinces of British Colombia and Ontario (Fellowship for Intentional Community, 1994). These communities display many of the sustainability indicators outlined above. They are grass roots, local initiatives that have begun their own developments without waiting for the leadership of government officials. They serve as role-models for sustainable development and sustainable living.

Social Sustainability

Communities exist within the larger environmental system. Issues of environmental sustainability have recently been gaining widespread attention and concern. Our current ways of living in the world and interacting with the environment are not conducive to the long-term health of our planet or its people (Dawson, 2006; Heinberg, 2007). The effects of post-industrialization, urbanization, and globalization are having negative consequences for people's sense of community and mental health, and are contributing to the breakdown of social ties and local support networks (Putnam, 1995; Trainer, 2000). This is creating various kinds of fragmentation between people and their local communities while promoting the acceptability of unsustainable living practices. The health of the environment has a direct and important impact on the health of communities (Jackson & Svensson, 2002). Sustainable and healthy communities must be built within a framework of a sustainable and healthy environment. Environmental and

economic sustainability, described below, are important aspects of a community that has the ability to provide its members with a sense of solidarity and to last over time (Dale, 2001).

Environmental Sustainability

    Ecological footprint. The "Ecological Footprint" has emerged as the world's premier measure of humanity's demand on nature (Global Footprint Network, 2009). It measures how much land and water area a human population requires to produce the resource it consumes and to absorb its wastes, using the prevailing technology (Wachernagel & Rees, 1996). Conceived in 1990 by Mathis Wachernagel and William Rees at the University of British Columbia, the Ecological Footprint is now in wide use by scientists, businesses, governments, agencies, individuals, and institutions working to monitor ecological resource use and advance sustainable development (Global Footprint Network, 2009).

    According to the Living Planet Report 2006 (Hails, 2006), humanity's Ecological Footprint was 31% larger than the planet's capacity to produce these resources. This ecological overshoot means that it now takes about one year and three months for the Earth to regenerate what we use in a single year. The carbon Footprint, which accounts for the use of fossil fuels, is almost half the total global Footprint, and is its fastest-growing component, increasing more than eleven fold from 1961 to 2005 (Global Footprint Network, 2009). According to the Living Planet Report 2008 (Hails, 2008), overshoot has increased by 5 percent since the last report was published in 2006. It shows that at the current rate humanity is using natural resources and producing waste, by the

early 2030's we will require the resources of two planets to meet our needs (Global

Footprint Network, 2009).

As reported in the Canadian Living Planet Report 2007 (Mitchell, 2007), if

everyone lived like Canadians, we would need 4.3 Earths to support us. The report,

released by Global Footprint Network and World Wide Fund (WWF) for Nature, reveals

that while Canada is endowed with abundant natural resources, it also has the 4th highest

Ecological Footprint per person of all nations. Results reveal that, with an Ecological

Footprint of 7.6 global hectares per person, Canada is using resources and turning them

into waste at a much higher rate than the global average. The report uses both the Living

Planet Index (which measures trends in biodiversity) and the Ecological Footprint to

detail the changing nature of our planet and describes how our planetary bank account is

currently being overdrawn (Global Footprint Network, 2009).

Turning resources into waste faster than waste can be turned back into resources

puts us in global ecological overshoot, depleting the very resources on which human life

and biodiversity depend. The result is collapsing fisheries, diminishing forest cover,

depletion of fresh water systems, and the build up of pollution and waste, all of which

add up to create enormous problems like global climate change (Global Public Policy

Network on Water Management, 2008). Overshoot also contributes to resource conflicts

and wars, mass migrations, famine, disease, and other human tragedies—and tends to

have a disproportionate impact on the poor, who cannot buy their way out of the problem

by getting resources from somewhere else (Global Footprint Network, 2009).

Energy crisis. "Peak Oil" refers to the point in time when oil and natural gas

reach their absolute peak of production. It is the midway point when half of the reserves

of fossil fuels have been used up (Hopkins, 2008). According to Kenneth Deffeyes

(2006), author of *Beyond Oil, we* have already reached that point as of May 2005.

According to his research, at that time conventional oil production peaked at 74.2 million

barrels a day and has been declining ever since. Other researchers give a range of dates,

with peak oil predicted to occur anywhere from 2007 to 2015 (Hopkins, 2008). Even the

skeptics, such as the Cambridge Energy Research Associates (Jackson, 2007), no longer

debate if oil production will peak, but rather it is merely a question of when.

After Peak Oil, the increasing cost of the remaining oil will trigger the rising cost

of all goods and services produced by it. Although it has taken 150 years to get to this

point, the remaining supplies will diminish much more rapidly due to increasing

population and resource use (Heinberg, 2003). There is an urgent need for alternative

renewable energy sources and a drastic reduction in consumption. Along with the energy

crisis, it is common knowledge that other concerns such as pollution and climate change

are having a dramatically negative impact on our environment and health.

Climate change and water shortage. The changes in global climate patterns that

have been occurring recently are due to an accumulation of greenhouse gases in the

atmosphere (Global Public Policy Network on Water Management, 2008). The

greenhouse effect is caused by increasing levels of carbon dioxide in the atmosphere,

which is a direct result of the combustion of fossil fuels and deforestation. The

greenhouse effect is also a result of increases in emissions of methane gases from mining

and livestock production, as well as increases in nitrous oxide emissions from agriculture

and airplanes (Hopkins, 2008). These pollutants have been linked to changes in

precipitation patterns and have resulted in increased flooding and drought, as well as

higher global temperatures that have led to an increased melting of glacier ice and rising sea levels. Climate change is causing changes in the quality, quantity, and availability of fresh water, which will have significant impacts on water resources for both human and natural systems (Global Public Policy Network on Water Management, 2008).

These impacts will be most noticeable with regards to agriculture, health, and ecosystems. Changes in water patterns due to global warming are expected to have far-reaching effects, including access to and utilization of water supplies, decreased food availability and security, increased conflict and instability, and increased biodiversity degradation (Global Public Policy Network on Water Management, 2008). All of these things are major threats to the survival of the human species, not to mention the diverse range of other animal species that inhabit the earth.

Although the issue of climate change has been controversial – with debates over whether the phenomenon is a result of human action or a natural occurrence – the fact remains that global climate has increased an average of 0.8 degrees Celsius since pre-industrial times. While this may not sound like much, this degree of change has produced alarming effects around the world, as described above (Hopkins, 2008). This fact alone should be enough to warrant some kind of action on behalf of the world's governments and its citizens, regardless of who or what is to "blame". It is imperative that we take action to reduce our human contribution to this problem. It would be in our best interest to cease any further harm and slow the damaging effects of rising global temperatures enough that we are able to come up with remedies to counteract it in the meantime. Fortunately, scientists, researchers, and concerned citizens are learning ways to use

energy and water efficiently, implement renewable energy sources, and slow down the damaging effects of climate change.

Business as usual? Competition for ecological services will play a critical role in the 21st century (Ewing et al., 2008). If we continue "business as usual", oil reserves will become depleted, global warming will alter the earth's climate, and the earth will become buried in human waste (Komiyama & Kraines, 2008). Peak oil and climate change will combine with food shortages, biodiversity loss, depleted fisheries, soil erosion, and freshwater stress to create a global supply-demand crunch of essential resources (Ewing et al., 2008). Humanity is already in "overshoot," using more resources than Earth can renew. In a post "peak everything" world, if consumption trends in today's wealthy nations and in the emerging economies continue at current rates, overshoot will increase dramatically (Heinberg 2007). This will mean further degradation of the Earth's capacity to generate resources, continuing accumulation of greenhouse gases and other wastes, and the likely collapse of critical ecosystems (Ewing et al., 2008).

Without significant change, countries that depend extensively upon ecological resources from abroad will become particularly vulnerable to supply chain disruptions, and to rising fees for greenhouse gas emissions and waste disposal (Ewing et al., 2008). On the other hand, countries with sufficient ecological reserves to balance their own consumption or even export resources will be at a competitive advantage. Those who prepare for living in a resource-constrained world will fare far better than those who do not. Stimulating and supporting technological innovations and services that promote well-being without draining resources will play a key role in this effort. Cities, regions, or

countries that are not able to provide a high quality of life on a low Footprint will be at a disadvantage in a resource-constrained future (Ewing et al., 2008).

Economic Sustainability

   The "free market" system. Our present global economy is basically a system of "massive but legitimate expropriation" (Trainer, 2000). The world's core economic and political systems function to siphon off most of the world's wealth to the benefit of a few. About 86% of world income goes to the richest 20%, while the poorest 20% receive only 1.3% of it. Living standards in developed countries would not be as high as they are if these enormous inequalities were not occurring. If the world's resources are used to produce throw-away affluent lifestyles, they are not available to provide basic necessities for most of the world's people. As a result, billions of people experience serious deprivation, while about 1% of the world's people own most of the corporate wealth. The main beneficiaries are the very few who own or manage the transnational corporations and banks. They are rapidly increasing their ownership and control through their success in promoting the free market ideology (Trainer, 2000).

   The overall problem of global unsustainability is largely the result of the freedom given to market forces, and the ideas that go along with it such as competition and individualism (Trainer, 2000). In a free market system, considerations of need and justice are irrelevant. Instead, resources go to those who can bid the most for them. There is also a powerful tendency for development to be inappropriate to the needs of most people and of the environment. To the conventional economist, "efficient" and "productive" investments are simply those that make the most profits (Goldsmith, 1997). It is regarded as far more "efficient" to put Third World land into producing luxury crops for export

than into feeding local hungry people. The free market system ensures that those with the most wealth will secure most of the resources and that the resulting development will be suited to their own advantage (Goldsmith, 1997). Within the present global economy, there is no possibility of satisfactory development for most people in the Third World. Satisfactory development will be possible when the rich countries reduce their consumption to their fair share of the world's resources (Trainer, 2000). Gandhi summed up the situation when he stated that the rich must live more simply so that the poor may simply live.

The limits to growth. The current economy is based on the idea of growth (Craig, 2006). According to this system, expansion of the economy is good and contraction of the economy is bad. The economy is measured by the Gross Domestic Product (GDP) which indicates the level of the nation's spending. As the GDP goes up, the economy increases. Yet, measuring the prosperity of a nation by what it spends does not contribute to an accurate understanding of prosperity. The GDP will increase, regardless of whether the government has spent money on public education or a nuclear bomb. The purchase of coal will increase the GDP, as will an increase in population (Craig, 2006).

Over the past 30 years, research has accumulated in support of the claim that the living standards and the levels of production and consumption in rich countries are grossly unsustainable. Ecological Footprint analysis indicates that to provide for one person living in a rich world city requires at least 4.5 ha of productive land. If 10 billion people were to live in the same manner, the amount of productive land required would be around 8 times all the productive land on the planet (Wachernagel & Rees, 1996). A sustainable society must therefore be defined in terms that extend well beyond taking

social control over the market. It must focus on notions of simplicity, co-operation, and self-sufficiency, and a long period of negative economic growth culminating in a steady-state economy (Trainer, 2000).

Continuous growth simply cannot occur in a system that makes use of non-renewable fossil fuels as its primary source of energy (Steinman & Leafe-Christian, 2006). For this reason, environmental and economic practices must be adapted to suit our current environmental conditions, and therefore, it is of high priority that these practices must become more sustainable in nature. The notion of prosperity must change to take into account the fact that there are limits to economic growth. It should also take into account the reality that our natural resources must be used efficiently and wisely in order for our environment and communities to survive and prosper. Hamstead and Quinn (2005) call for practitioners to challenge the growth paradigm of the modern economy, since over-consumption (at all levels from national to individual) is at the root of most Western sustainable development issues.

Rethinking wealth. The information presented on social, environmental, and economic sustainability is more than just merely an "inconvenient truth", but rather a critical issue that demands bold action. Prosperity and well-being will not be possible without making intelligent choices regarding the basic ecological resources that sustain the economy, and more importantly, all of life (Ewing et al., 2008). In an age of growing resource scarcity, the wealth of nations increasingly will be defined in terms of who has ecological assets, and who does not. Preparing for this new economic truth will take time, making it urgent to begin as quickly as possible (Ewing et al., 2008).

To reduce our Ecological Footprint, strategies to manage and protect ecological resources while minimizing the demand on the ecosystem need to be implemented on a mass scale. This means investing in technology and infrastructure that will allow us to operate more efficiently in a resource-constrained world. It means taking individual action, and creating public demand for the participation of businesses and policy makers. Using tools like the Ecological Footprint to manage our ecological resources is essential for humanity's survival and success. Knowing how much nature we have, how much we use, and who uses what is the first step, and will allow us to track our progress as we work toward our goal of sustainable, one-planet living (Global Footprint Network, 2009). It is almost certainly the case that countries and regions with surplus ecological reserves—not the ones relying on continued ecological deficit spending—will emerge as the robust and sustainable economies and societies of the future (Global Footprint Network, 2009).

If the "limits to growth" analysis is valid, we have no choice but to dramatically reduce resource use and environmental impact, and this means we must shift to a simpler way of life (Trainer, 2000). Living more simply does not mean deprivation or going without the things necessary for a high quality of life. It means being content with what is sufficient for hygiene, comfort, convenience, etc. This is in contrast to the over-consumption that is prevalent in our current society. Adequate living standards are easily achieved if acceptance of simpler lifestyles is combined with the use of alternative technologies such as earth building and permaculture design. The most important aspect of living more simply is the development of small-scale, highly self-sufficient local economies, since local production drastically reduces resource and energy consumption

in a variety of ways (Trainer, 2000). Some suggestions for adapting the economy to the changing environmental conditions include: rebuilding local agriculture and food production, localizing renewable sources of energy production, rediscovering local and sustainable building materials, rethinking healthcare and waste-management in order to come up with better alternatives that will benefit us down the road (Hopkins, 2008).

If society can embrace these new ideas in a positive manner, it will increase our resilience and offer the potential of a new-age renaissance – environmentally, economically, culturally, and spiritually. Money will no longer be the symbol of wealth and abundance, but instead people will have the opportunity to realize the deeper meaning of these concepts. Spiritual abundance will be valued over material wealth. Happiness, health, equality, justice, integrity, harmony with nature, and peace amongst people will be the new symbols of a society that is truly prosperous. It is the author's opinion that this type of change is exceedingly important, and desperately needed, in a world filled with consumerism, materialism, and ceaseless economic growth, which occurs at the expense of our individual and collective health and well-being. Eco-communities challenge dominant assumptions of unlimited production and look for local alternatives. They offer direction and provide an example of how society can incorporate principles of sustainability into our common way of living, without having to suffer from a reduced quality of life or a reduction in perceived levels of well-being.

Eco-communities

Worldwide, there exist certain communities that have been putting these notions of sustainability into practice. For the purposes of this study, eco-communities consist of two very specific types of intentional communities – ecovillages and cohousing

communities – both of which demonstrate environmentally sustainable living practices to varying degrees. These types of communities will be defined and described in detail further on. First, a rationale explaining the importance of studying eco-communities is presented, followed by the history of utopian and intentional communities in general, and then a more detailed look at the precise definitions and various types of intentional communities, leading up to the current status of these communities as they presently exist at this point in time.

Why Study Eco-communities?

Eco-communities can be seen as models for a more sustainable way of life. Their focus is on changing our culture, for us and for future generations. Ecovillages are increasingly being described as "lifeboat communities" during the widely predicted energy crisis ahead (Leafe-Christian, 2007). They aim to share what they've learned with the rest of society, through giving tours, hosting workshops, and offering training and internships. Cohousing communities offer another model of sustainable living that is intermediate between mainstream society and ecovillages. This research aims to explore whether or not the eco-community lifestyle is psychologically and socially beneficial. If so, then it may be advantageous to view eco-communities as models from which we can learn to adopt the principles of permaculture design and intentional community. The application of these techniques to our current ways of life, in terms of building sustainable infrastructure and lifestyles, and developing a stronger sense of community, can potentially contribute to enhanced mental well-being and quality of life for individuals and the communities we form.

History of Utopian and Intentional Communities

Intentional communities are one of the most recent developments in the utopian tradition. Understanding intentional communities requires an understanding of the utopian community movement as a whole, although the link between them has been debated (Goodwin, 1978). *Utopia* is a collective expression of a desire for a better way of life. The tradition has a long and rich history, whose roots can be traced back to the late 1700's. Early utopian communities were often based on socialist or communist principles, established and formed as a critique of the contemporary capitalist ideology (Goodwin, 1978).

Numbers of American communal societies increased during the nineteenth century, from 1840 – 1860, and then gained popularity again in the 1960's, with many similarities between these two movements. Nineteenth century communes sought to create a better life for individuals who wanted to escape from the industrial labor force (Goodwin, 1978). In both time periods, communities were typically formed based on the goals of either anarchy and/or spirituality. Many of the 1960's communes did not survive for long, due to the death or departure of the spiritual leader, the unwillingness of members to do the work necessary to keep the community running, or a lack of knowledge and skill as to what would make a strong community. Communities that formed around a drug-based lifestyle also did not survive for long (Miller, 1999). Despite these failures, a few communities have managed to stand the test of time. The success of certain communities, and not others, is attributed to the community's ability to: 1) form an identity based on shared values, 2) provide structure and access to their residents, and 3) adapt themselves to changing societal and environmental conditions

(Dreistadt, 2004). Communities that were not able to live up to these standards did not last over the long-term. These conditions will be explored further when we look at the current status of intentional communities.

From the 1960's wave of communes, the foundation of the "counter-culture" movement was built (Miller, 1999). Many counter-culture communitarians believed that the social and cultural problems commonly found within cities and suburbs were a direct result of their ties to capitalism. From their perspective, the solution was not to change existing urban conditions, since they lacked support for an all-out revolution against governmental and economic structures. Instead, their solution was to start their own communities and limit their involvement in the capitalist economy. Contrary to stereotypes of drug-crazed dropouts, many of these communitarians were college-educated, with 52% of them having college degrees, in comparison to 14% of all Americans in their age group (Miller, 1999). While reasons for joining communities varied, many who did so were not only running *from* mainstream society, but also *to* what they perceived as a better way of life. While the material standard of living was not as high as in mainstream society, communitarians instead sought deeper connections with one another and a sense of fulfillment that they could not find in the outside world (Miller, 1999). This indicates that there was a shift in attitude towards more community-oriented values that could not be found in the mainstream society of that time.

Although many communes of the 60's have since disintegrated, it seems that the sentiment of yearning for a better way of life still exists among community-minded people of the present day. Based on the history of the nineteenth-century communes and counter-culture movement of the 1960's, it is worth asking whether similar attitudes and

values hold true for individuals involved with modern-day intentional communities. It is also worth investigating whether or not these current communities have in place the conditions needed for them to be sustainable, and successful, over time. These conditions are explored in this study through the concept of social capital.

Times changed and the idea of intentional community waned again for a couple of decades. Global Ecological Footprint studies indicate that after the decade of the sixties, people in the industrialized nations began living beyond their means, using up the Earth's natural capital rather than living sustainably, as was previously done (Dawson, 2006). Quality of life in the industrialized world peaked in the mid-1970's, but has been going downhill ever since, while at the same time the GDP has continued to increase. By the late 1980's, the fall in quality of life was substantial. Holes in the ozone, deforestation, and species extinctions all indicated serious problems of resource depletion and environmental degradation, yet the governments continued to invest in non-renewable energy sources at an unprecedented rate. The integrity of communities was being compromised by economic policies favoring mass production and globalization. Meanwhile, increases in crime, depression and other mental illnesses, drug abuse, and suicide were definite signs of the growing alienation and anomie experienced by the people of that time (Dawson, 2006). Government responses to these problems were inadequate, and environmental issues were pushed to the background while economic concerns took precedence (Dawson, 2006). With mounting evidence of increasing ecological and social deterioration, along with the limited political response to these problems, citizens' groups began to organize with the goal of creating models for sustainable communities.

The most influential of these movements was initiated by the Danish social activist, Hildur Jackson, who was largely responsible for the emergence of the first cohousing communities in Denmark in the 1960's (Dawson, 2006). She and her husband, Canadian entrepreneur Ross Jackson, established Gaia Trust, a foundation dedicated to facilitating the emergence of sustainable human settlements. In 1990, Gaia Trust partnered with Robert and Diane Gilman, editors of *In Context* magazine; a magazine exploring the emergence of various sustainable communities. The Gilmans undertook a study, entitled "Ecovillages and Sustainable Communities" (as cited in Dawson, 2006), highlighting international best practice in the field of sustainable living. Twenty-six communities from around the world were described in the report, which aimed to synthesize common themes and attributes of the types of communities that would be pioneers in the transition to a truly sustainable society.

The type of community described in the Gilman's report was not an attempt to return to an idealized past. Instead, the aim was to create a new synthesis of the best known ways of treading lightly on the Earth, practicing community-level government, and applying modern, energy-efficient technologies. This model was seen as mirroring a transformation in our understanding of the world – a new holistic worldview that emphasizes the connections and relationships between activities, processes, and structures (Dawson, 2006). Ideally, eco-communities will be a microcosm of society as a whole, as this new worldview takes root and spreads.

Current Intentional Communities

Intentional community. Intentional communities are formed when people choose to live with or near each other in order to carry out a shared lifestyle, within a shared

culture, and with a common purpose (Metcalf, 2004). Most intentional communities share land or housing, or live on neighboring properties, although a few are non-residential. Most are self-governing, with some sort of participatory democracy, such as consensus decision-making or majority-rule voting. A small number of communities (mostly spiritual or religious communities) are governed by a leader or group of leaders (Leafe-Christian, 2007). There are several kinds of intentional communities, each with a different common purpose. This research will focus on communities that exhibit environmentally sustainable living practices – both ecovillages and cohousing communities.

Ecovillages. Ecovillages are intentional communities that demonstrate ecologically sustainable lifestyles (Leafe-Christian, 2007). Ecovillages can be urban or rural. Ideally, they are full-featured settlements that provide residents with the opportunity to interact with the natural world in a way that is supportive of healthy environmental practices, human development, and interpersonal relationships. In practice, however, many ecovillages are not entirely "full-featured" settlements as of yet. Due to the relative novelty of the idea, especially in Canada, many ecovillages are still in the forming stages and thus are not able to provide residents with all of the amenities, nor the conveniences, of nearby towns and cities. Especially during the early years, paid employment is a scarcity and most residents are either self-employed, find employment outside of the community, or make a living off the land (Leafe-Christian, 2007).

The goal of many ecovillage residents is to live in a harmonious way that can be successfully continued into the indefinite future. Ecovillages are based on "permaculture" principles. *Permaculture* means "permanent agriculture" and/or "permanent culture".

Common practices include growing a large percentage of their own organic food, composting, recycling, living in passive-solar heated homes made of natural materials such as strawbale or cob, car-pooling and/or using biodiesel fuels. Most ecovillages generate at least some of their own renewable energy and aim to eventually be completely "off the grid" (Leafe-Christian, 2007). By extension, ecovillages are not only models for environmental sustainability, but are often models for economic sustainability as well - the rationale for this will be discussed in the upcoming section on economic sustainability in eco-communities.

Cohousing communities. Cohousing communities are small, close-knit neighborhoods owned and managed by the residents themselves. They can be urban, suburban, and sometimes even rural. They are often described as ideal places to raise families or retire. Cohousing communities are the fastest growing kind of intentional community in North America. As of 2006, there were 94 completed cohousing neighborhoods and 110 cohousing projects in the forming stages in North America alone. The average cohousing development has about 26-30 homes and approximately 50-60 members. Similar to the ecovillage movement, cohousing is an international phenomenon with several hundred communities worldwide, especially in Europe and North America, but also in New Zealand, Australia, and Japan (Leafe-Christian, 2007).

Cohousing was first developed in the 1960's by Danish architects to address the alienation of modern suburbia, where there is often a diminished sense of community and very few people know their neighbors. Cohousing developments were consciously designed to encourage social interactions amongst neighbors. Typically, small-size housing units face each other across a common green-space or courtyard. Vehicles are

parked away from the housing units, with pedestrian walkways throughout the space providing an opportunity to interact with neighbors on a daily basis (Leafe-Christian, 2007).

The housing units can be town house or apartment style, but are sometimes free-standing houses. They each contain all the features of a conventional home, except laundry rooms and guest rooms. In addition, there is a centrally located community building called the common house, which includes a communal kitchen, large dining room, sitting room, children's play area, laundry facilities, one or two guest rooms, and sometimes a workshop, library, exercise room, and/or crafts room. The common house is an extension of everyone's private home and the community members use it continually, especially for shared meals usually two or three times a week. The common house is also the location of community meetings, where residents make decisions, usually by consensus. Making decisions and sharing in the maintenance of the property creates a sense of connection, trust, and mutual support for the cohousers (Leafe-Christian, 2007).

Other types of intentional communities. It is useful to distinguish eco-communities from other types of intentional communities, although there is usually a degree of overlap. There are various kinds of urban group-housing co-ops, such as housing co-ops for students, elders, and individuals with limited incomes, or physical and mental disabilities. There are also rural "back-to-the-land" homesteads, conference and holistic health/retreat centers, spiritual communities, Christian or other religious communities, and income-sharing communities (communes). Each type of intentional communities is formed around a common shared goal, which is often explicitly stated in

the community's official mandate or vision statement, and which differs from community to community.

Intentional communities may also demonstrate a range of environmentally sustainable practices, to varying degrees. Due to the nature of group housing, for example, there will automatically be an emphasis on shared resources and reduced waste. However, only ecovillages and cohousing communities in particular are included in this study, due to their *primary* emphasis on sustainability, as well as the greater extent to which they are able to serve as models of community that can be generalized to mainstream communities. In other words, they are more similar in structure to that of our current societal structures, with ecovillages being representative of small towns/villages or suburbs, and cohousing communities being representative of townhousing or apartment building complexes within the cities.

Community identity and framework. Many of today's intentional communities construct a community identity around the shared values of cultural, racial, and ethnic diversity; and encourage equality between the genders, as well as people of all ages. Individuality and the right to privacy are also respected and encouraged. Fully operating intentional communities provide the basic needs for community members, including housing, work, and recreation (Dreistadt, 2004). Many have a governing structure organized around the principle of community consensus decision-making or majority-rule voting. The governing structure creates and enforces rules, promoting and maintaining the original guiding principles upon which the community was founded (Leafe-Christian, 2007). Residents share incomes or pool resources to varying degrees, for example, by contributing a monthly community fee, car-pooling, and making use of common

buildings, facilities, and equipment. Many communities are organized around a common spiritual or religious belief, which all members may or may not share. For example, some define themselves as Christian, Buddhist, Native American or earth-based spirituality, and/or eclectic, etc. Intentional communities, and ecovillages in particular, often have stated goals of controlled growth and environmental preservation (Dreistadt, 2004). This framework encourages residents to create a strong and vibrant community organized around a common identity and shared values - in other words, a strong sense of solidarity, which is one of the fundamental building blocks of a community that will last over time.

Current status. In the first edition of the *Directory of Intentional Communities,* published in 1990, more than 8000 people (including over 2000 children) were listed as living in 186 of the more established North American intentional communities of that time. The 186 intentional communities that were listed represented only a fraction of the number of functioning intentional communities, since many other intentional communities failed to provide complete demographic information and were therefore not listed in the directory (as cited in Questenberry, 1996). In 1995, the Global Ecovillage Network was created to promote sustainable living around the world. Since then, numbers of intentional communities and ecovillages have increased rapidly. The online *Directory of Intentional Communities* continues to grow, now listing over 1750 different intentional communities in North America alone (Fellowship for Intentional Community, 1994), with approximately 20 new listings being added each month. Worldwide, there are several thousand intentional communities and their numbers continue to expand (as cited in Schulte, 2007). Ecovillages in particular have been gaining popularity, due to their emphasis on sustainable "off the grid" living during the predicted energy decline.

Although many newly established intentional communities fail within the first two years, some communities, such as Findhorn Intentional Community in Scotland, have stood the test of time. Findhorn has survived and grown over the past 40 years, due to its ability to adapt to changing societal conditions (Forster & Wilhelmus, 2005). Other well-known successful communities include Twin Oaks,Virginia; Alpha Farm, Oregon; O.U.R. Ecovillage, British Columbia; along with many others in the United States and Canada. The intentional community movement is also popular in the United Kingdom and New Zealand, with many communities having lasted over 20 years (The Global Ecovillage Network, 2007). As previously mentioned, the success of certain intentional communities is attributed to their ability to meet three important criteria: 1) form an identity based on shared values (sense of community), 2) provide structure and access to their residents (social capital), and 3) adapt themselves to changing societal and environmental conditions (sustainability) (Dreistadt, 2004). All three of these conditions are closely related to the main concepts of individual-level sense of community, community-level social capital, and issues of sustainability that are a focus of this research.

<center>*Sustainability in Eco-communities*</center>

Environmental Sustainability in Eco-communities

Eco-communities place a primary emphasis on environmental consciousness, exhibited by their common concern for ecologically sound production and consumption. The pooling of resources is considered essential to environmental protection and preservation (Dreistadt 2004). For example, it is highly inefficient for each family to have its own washing machine, lawn mower, automobile, and kitchen. Instead, an entire

community can share just a few of these items, greatly reducing the need for energy and resource consumption.

Designing communities so that facilities needed for living and working are within a short distance from each other greatly reduces the need to drive. Communal buildings are designed to reduce the number of structures needed for residents to live and work; for example, dormitory or apartment-style complexes, as opposed to individual housing units. Organic community gardens promote socialization and often provide a large percentage of the local food supply. Community composting piles reduce waste and can be used to fertilize soil. Eco-communities also make use of various renewable energy sources such as solar, wind, and geothermal.

Economic Sustainability in Eco-communities

Since most eco-communities are, to varying degrees, sustainable and self-sufficient, they are not dramatically affected by fluctuating costs associated with the economy and energy supply. Instead, they attempt to emulate a steady-state economic system. A *steady state* economy: 1) is built on the concept that money does not buy happiness; 2) sees the economy as part of the environment (not the other way around), and 3) aims for a low and sustainable level of natural resource use as opposed to continuous growth and expansion (Craig, 2006).

Along with demonstrating principles of the steady state economy, eco-communities, especially ecovillages, often make a point of purchasing locally produced items, as well as contributing their own specialized products and services to be accessed by neighboring communities. This reduces the use of fossil fuels in transporting goods. Some ecovillages rely on a system of barter, and a few have even implemented their own

forms of local currency (Leafe-Christian, 2007). This prevents them from being vulnerable to the fluctuating value of currency in the present mainstream economic system.

Sustainability of Eco-communities

The structure of most eco-communities is modified to promote interpersonal cooperation, increasing the face-to-face interaction between community members, and thus, increasing social capital resources. Social capital has been widely recognized as playing an important role in sustainable community development (Grootaert & Van Bastelaer, 2002). As components of social capital, social structures and underlying attitudes have the ability to increase the efficiency of collective action. Cognitive social capital is understood as a necessary requirement on which to establish more permanent community structures, such as structural social capital.

Social capital also plays an important role in sustainable economic development. Briefly, this is done is three ways: 1) participation by individuals in social networks increases the availability of information and lowers its cost; 2) participation in local networks, along with attitudes of mutual trust, make it easier for any group to reach collective decisions and implement collective action; and 3) the presence of community networks and community-minded attitudes reduce opportunistic behaviour by individual community members (Grootaert & Van Bastelaer, 2002).

From this information, it is possible to extend this line of thought to say that a high degree of social capital represents a shift away from the individualism that is so prominent in North American culture today, towards more of a collective/community-minded attitude, where the good of all is considered to be more highly valued than the

good of the individual. This shift may lead to a lessening of the negative effects

associated with individualism, such as selfishness and alienation, as previously discussed.

The Elements of Sustainable Living

Once a community is developed with sustainability in mind, it is still important to

consider how it will continue to function in sustainable ways. Eco-communities around

the world have found ways to incorporate the three imperatives of sustainability

(environmental, economic, and social) while retaining a high quality of life emphasizing

the value of social capital. As previously discussed, social capital is a prerequisite for a

strong community that will be sustainable into the future (Grootaert & Van Bastelaer,

2002). Ecovillages in particular place a strong emphasis on demonstrating practical ways

of incorporating the principles of sustainability into mainstream society's current ways of

life. Hildur Jackson, a leading figure in the co-housing and sustainable community field,

and Karen Svensson (2002) have developed a model called "The 15 Elements of

Ecovillage Living". These fifteen elements constitute a broad definition of sustainability,

and are divided into the three dimensions of ecological, social-economic, and cultural-

spiritual; with each of the three dimensions containing five elements (Table 2).

This model is based on their extensive experience in the Global Ecovillage

Movement and sustainable community development worldwide. It provides an all-

encompassing and specific outline of the areas that are assigned importance. Each of the

fifteen topics is an area of specialization, and it would take an entire community to put

these ideas into practice on a large scale. Yet it has been done many times to varying

degrees in eco-communities around the world. Within Canada, the eco-communities of

British Columbia seem to be at the forefront of these spreading ideals.

Table 2

The 15 Elements of Ecovillage Living (Jackson & Svensson, 2002)

- Ecological Dimension

  1) Permaculture, Ecovillage design
  2) Wilderness, Biodiversity, Earth restoration
  3) Local organic food production and consumption
  4) Ecological building, Renewable energy, Local water care
  5) Green business, Life Cycle analyses

- Social – Economic Dimension

  1) Localizing economics, Complementary currencies, Sustainable abundance
  2) Modernizing welfare - Care of children & elderly, Integration of handicapped
  3) Building community, Decision-making, Conflict resolution
  4) Healthy lifestyle, Preventive healthcare, Complementary medicine
  5) Education and Communication

- Cultural – Spiritual Dimension

  1) Creativity, Personal unfolding
  2) Spirituality - Finding divinity within, Uniting with nature
  3) Celebrating life - Honoring cultures, Natural cycles
  4) Holistic worldview, Science and philosophy
  5) Localization, Bioregions, Resisting globalization

"The 15 Elements of Ecovillage Living", proposed by Jackson and Svensson (2002) builds off of the conventional model by combining the economic and social dimension together, and adding another dimension of cultural-spiritual to reflect the idea of a holistic worldview. This worldview brings together science and spirituality, practicality and creativity, and holds both a local and global vision. It is oriented around cooperation and the "good of all" as opposed to individualism and corporate elitism. The bottom line is sustainability and wellness, as opposed to profit. A sustainable conceptualization of wealth, and a more equal distribution of resources will benefit

everyone, not just the privileged few. After all, evidence has indicated that the larger the

division between the rich and the poor, the higher the degree of ill-health, stress, and

disease – not only for the poor, but for the rich as well (Robbins, 2006). The ecovillage

model portrays a balanced and harmonious integration of many diverse elements. It

promotes health and well-being on all levels – individual, community, and global.

Integration of Concepts

There are several linkages between the concepts related to Health and Wellness

(mental/emotional well-being and quality of life), and the concepts related to Community

(sense of community and social capital). The ideas of mental/emotional wellness and

sense of community relate to the individual, whereas the ideas of quality of life and social

capital relate to the community.

Quality of life is the over-arching concept that is made up of all the other

concepts, including social capital and psychological sense of community (Perkins and

Long, 2002), and subjective emotional well-being (Diener & Lucas, 2000; Helliwell,

2003). Essentially, quality of life is defined by these elements. Thus, quality of life

measures can be used as an indicator of the individual-level concepts of psychological

sense of community and subjective emotional well-being – both factors that contribute to

individual health and wellness.

Elements of subjective emotional well-being have been correlated with elements

of (community-level) social capital (Helliwell, 2003). For example, the variable of trust,

exhibited by communities with high levels of social capital, has been shown to have a

positive effect on subjective emotional well-being. Research has also indicated that

individuals who are more involved in their communities are also generally happier with their lives (Perkins and Long, 2002).

By measuring the community-level concepts of quality of life and social capital, we can make inferences about the subjective emotional well-being and mental wellness of the individuals who make up those communities. For example, in a community demonstrating high levels of both social capital and quality of life, as reported by individual community members themselves, it can be assumed that the individuals, on average, will also report high levels of mental/emotional wellness. Since social capital is indicative of a strong and healthy community, and quality of life is indicative of mental wellness, we can investigate these concepts in order to determine if eco-communities have the ability to be sustainable over the long term while providing their residents with high levels of mental well-being.

Wellness and Quality of Life in Eco-communities

Studying communities allows researchers to understand the factors that contribute to higher levels of emotional well-being and quality of life. Since eco-communities can be seen as models for a sustainable way a life, it is worth investigating whether these types of communities can provide residents with high levels of mental wellness and quality of life as well. By investigating community-level indicators of mental wellness in eco-communities, such as social capital and quality of life, these relationships and the dynamics of how they operate can be more fully understood within this context. If social capital is found to be high, this would lend support to the idea that eco-communities are formed around the principles of trust, cooperation, sense of belonging, and solidarity. Determining the importance placed on the various types of capital, such as built, human,

social, and natural will help shed light on the value systems operating within eco-communities, which may also have an impact on overall quality of life. If quality of life if high, then the results of this study will have indicated that it is possible, at least for residents of eco-communities, to maintain a high quality of life while living in environmentally and economically sustainable ways.

Sense of Community and Social Capital in Eco-communities

Psychological sense of community and social capital are both consistent and widely valued indicators of quality of community life (Perkins and Long, 2002). For the purpose of this study, sense of community will be seen as one aspect of social capital, operating within it on an individual level. For this reason, sense of community will not be directly measured. Instead, it will be assumed that participants who volunteer for the study will demonstrate an implicit sense of community, since the participants will be required to self-select based on the criterion of whether they believe they are an eco-community "resident" or "member".

Each community has its own specific common goals, whether they are pooling resources, sharing spiritual beliefs/practices, or living in an environmentally sustainable way. Individuals decide which community they will live in based on shared values with other community members. In this way, individuals select an environment that supports their values and beliefs, and offers them shared emotional connections, as well as a sense of belonging and sense of community within a group of like-minded individuals. Since intentional communities generally operate on principles of participatory government and community interaction, each individual has the opportunity to influence the community, and have their psychological needs integrated and fulfilled.

Equal access to social and physical resources is a critical component of building social capital (Foley & Edwards, 1999). Residents of intentional communities are required to pool resources as an integral part of community living, not only for environmental reasons, but also to promote community interaction. By pooling resources in order to provide for an extensive common infrastructure, residents equally benefit from access to a much wider range of facilities and services than would be available to residents of most conventional communities. Residents themselves are required to contribute a certain amount of work to building and maintaining this infrastructure. This also encourages involvement in the local community and interaction between fellow residents. Cognitive social capital in intentional communities may be exhibited by the emphasis on having close and mutually supportive relationships with fellow community members.

Foundation of a Strong and Sustainable Community

Social capital is the process by which residents create and access social and physical resources that allow them, as a group, to form a community (Dreistadt, 2004). Three specific components of cognitive social capital include: 1) solidarity, 2) trust, and 3) conflict resolution (Grootaert & Van Bastelaer, 2002). The presence of cognitive social capital is necessary in order to establish future structural social capital, which will ultimately lead to the formation of a strong and sustainable community. For this reason, the presence of cognitive social capital within a community will serve as an indicator that the community has in place the foundation for a strong community that will last over time.

Chapter Three: Methods

In this exploratory research, a quantitative design is implemented in order to determine certain characteristics of eco-communities in British Columbia, Canada, as they exist at one point in time. Self-administered questionnaires were provided to participants in order to collect data. Descriptive statistics and tests of statistical significance have been used in the analysis of the results.

Participants

The goal of this study is to describe the levels of quality of life and social capital within the target population of Canadian eco-community residents. To achieve this goal, a self-selected sample has been acquired from within this general population. The accessible population included all residents/members of eco-communities in British Columbia (B.C.) who volunteered to participate in the study. According to the online Directory of Intentional Communities (Fellowship for Intentional Community, 1994), there are 25 listed eco-villages, 13 (52%) of which are located in B.C.; and of the 17 listed co-housing communities, 10 (59%) are located in B.C. Together, the eco-communities of B.C. contain more than 70% of the total population of residents/members of official eco-communities in all of Canada (Fellowship for Intentional Community, 1994). The general tendency appears to be that most eco-communities of B.C. have begun their formation earlier than most other eco-communities in Canada. Several communities in B.C. are fully established, whereas most other eco-communities in Canada still appear to be in the forming stages. "Official" eco-communities, in this study, are those that are listed in the online directories from which I have obtained the sample (Fellowship for Intentional Community, 1994; The Global Ecovillage Network, 2007).

Participants have self-selected on a voluntary basis by convenience sampling methods, as described in detail further on. Since there are only a small number of official eco-communities in Canada, and due to the nature of quantitative research, which requires a sufficient sample size, information has been obtained from every resident of the accessible population who was willing to participate in the study. This was required in order to achieve a large enough data set from which to draw conclusions.

From the 109 surveys that were sent out, 34 were returned completed, for a response rate of 31.2%. Results from a recent meta-analysis (Van Horn et al., 2009) provide an overview of the state of postal survey research in the published literature in counseling and clinical psychology from 1985 to 2005. From 168,645 survey respondents, results showed a weighted mean response rate of 49.6% with response rates ranging from 14% to 91%. The mean response rate of 49.6% was typically based on one to two mailings with no pre-notification and no incentives used – similar to the methods of the current study. Although this response rate is higher than that expected from other professional populations (e.g., 44% reported for business samples; Green & Boser, 2001), it is unclear whether responses from approximately half of a sampled group provide an accurate description of the population sampled – indicating a potential limitation. In addition, Van Horn et al.'s (2009) review used response rates from studies in the published literature only. It is possible and even likely that response rates in the unpublished literature are lower (Van Horn et al., 2009). Based on the results from this meta-analysis, it is the author's opinion that a 31.2% response rate is adequate for the purposes of this study, which is exploratory in nature. In most social science research, a one in three response rate is common and considered acceptable. However, the author is

cautious in interpreting the results, pointing out that participants in this study are not representative of all eco-communities. This issue will be discussed further in the limitations and suggestions for future research.

Twenty-four respondents were from four different cohousing communities, and 10 respondents were from five different ecovillage communities. Of the 34 participants who completed the survey, 8 (23.5%) were males and 26 were females (76.5%), ranging in ages from 31 – 78 years old, with a mean age of 54. All participants in this study are English-speaking adults, who have identified themselves as "members" or "residents" of the eco-communities from within the accessible population. The reason for the distinction between "members" and "residents" is because not all residents live at the eco-communities year-round, since many obtain seasonal employment throughout the winter months in nearby towns/cities.

Based on this information, surveys were mailed out in the high seasons of spring and summer, when more residents/members were likely to be living on-site. The first round of surveys was sent out in May 2008, and a second round was sent out in September 2008 to those who had requested the researcher to contact them in a few months due to busy schedules. Self-identified community residents/members satisfy the criterion of "psychological sense of community", in which members have a subjective sense of belonging to the community regardless of the precise geographical location, as described in the literature review. From this individual-level criterion, along with questionnaire results, more general assumptions can be made about cognitive social capital at the community level.

The sampling frame was obtained from the Intentional Communities website, online Directory of Ecovillages (Fellowship for Intentional Community, 1994), as well as the Global Ecovillage Network's online Ecovillage Directory (The Global Ecovillage Network, 2007). These directories contain listings and contact information for official eco-communities around the world, and are being updated on an ongoing basis as new communities form. However, this list is not comprehensive due to the fact that not all communities have supplied information to be posted on these websites. Unfortunately, there is no way of obtaining information about these unlisted eco-communities.

The sampling procedure was based on convenience sampling methods, since approximately 60% (19 out of 31) of eco-communities in Canada are located in British Columbia, and this population was readily available and easily accessible to the researcher. Inherent in this sampling method is the potential for bias, since residents of B.C. eco-communities may not share the same characteristics of residents from Canadian eco-communities. However, residents/members of eco-communities in general may be representative of a diversity of geographical locations due to the self-selection process by which they decide to live there in the first place. The fact that the majority of eco-communities in Canada are located within one geographically proximate location (B.C.), suggested that this sample was worth studying and describing. These two points indicate that the potential bias of this sampling method is less significant than the potential benefits of using it for this study.

Within the convenience sample, a random sampling technique was used, providing each resident/member with an equal opportunity to participate if they chose to. The sample was obtained by the researcher, who sent an email to the representative of

each B.C. eco-community listed in the directory. In the email, the researcher explained

the purpose of the study, asked for approximate numbers of community

residents/members, and obtained permission to mail the appropriate number of surveys to

the eco-community site for residents/members to complete on a voluntary basis

(Appendix C).

For the quality of life portion of this study, a comparison group was obtained

from "The World Health Organization's WHOQOL-BREF's quality of life assessment:

Psychometric properties and results of the international field trial" (Skevington, Lofty, &

O'Connell, 2004). Since there has not yet been any Canadian general population data, the

researcher found the data from the field trial to be the best available in order to use as a

comparison in this study.

In the World Health Organization's (WHO) international field trial (Skevington,

Lofty, & O'Connell, 2004), the WHOQOL-BREF's psychometric properties were

analyzed using cross-sectional data obtained from a survey of adults carried out in 23

countries (n = 11,830), in all the WHO regions of the world, as well as from diverse

cultures and different levels of socio-economic development. Data were contributed from

field sites in Argentina, Australia, Brazil, Bulgaria, China, Croatia, Germany, Greece,

Hungary, Israel, Italy, India: Madras and New Delhi, Japan, Malaysia, Netherlands,

Nigeria, Norway, Romania, Russia, Spain, Turkey, United Kingdom, and United States.

Adult participants (adult was culturally defined) were recruited from a variety of in-

patient and out-patient health care facilities, and from the general population. Wellness or

sickness was defined by self-report, and from diagnostic categories assigned by health

professionals. Standard instructions, socio-demographic details and an item on current

health status were completed before answering the 26 items of the WHOQOL-BREF.

The study population consisted of adults aged 12-97 years with a mean age of 45 (only

0.3% were under the age of 16; in some parts of India, 12 years old is considered an

adult). Of all the respondents, 53% were female and 47% were male.

Materials

World Health Organization Quality of Life Survey – BREF (WHOQOL-BREF)

The first construct to be measured is quality of life. For this, the standardized brief

United States version of the World Health Organization's Quality of Life Survey

(Appendix F) was administered. Information about the WHOQOL-BREF has been

obtained from the *Australian WHOQOL instruments: User's manual and interpretation*

guide (Murphy, B; Herrman, H; Hawthorne, G; Pinzone, T; & Evert, H., 2000).

Permission to use the formal instrument was granted from the Seattle Quality of Life

Group, University of Washington, Instrument Coordinator (Skalicky, 2008). This test

assesses individuals' perceptions of their position in life in the context of the culture and

value systems in which they live and in relation to their goals (World Health

Organization, 2004). The WHOQOL-BREF instrument was developed from the

WHOQOL-100 (long version). It consists of twenty-four items measuring the four facets

of 1) physical health, 2) psychological health, 3) social relationships, and 4) environment.

In addition, overall quality of life (Q1) and general health (Q2) are included as two

separate facets, called "global items", for a total of twenty-six items within six facets, as

opposed to the 100-item long version (also with six facets). The brief version is more

suitable and convenient for researchers conducting large-scale studies (World Health

Organization, 2004). The results from this instrument will be used to determine quality of

life on a community-level basis, due to the limitations of the survey itself, and for the purpose of the research which is a community-level analysis only.

Reliability and validity of the WHOQOL-BREF. All four domains demonstrate good internal consistency, with correlations above 0.8 for each of the domains. Over a two to eight week period, test-retest reliability for these domains was generally high (0.66 – 0.87). The two global items (Q1 and Q2) show moderate but acceptable test-retest reliability. At the individual item level, correlations ranged from .230-.618, indicating low reliability (Murphy, B; Herrman, H; Hawthorne, G; Pinzone, T; & Evert, H., 2000). These findings tell us that the WHOQOL-BREF is not appropriate for individual assessment, but is adequate for the assessment of quality of life at a population level.

Physical and psychological domains demonstrate good construct validity. Social relationships and environment domains show moderate yet significant validity correlations. Both global items demonstrate good discriminant validity between well, ill, and very ill populations, and are therefore good indicators of overall quality of life (Murphy, B; Herrman, H; Hawthorne, G; Pinzone, T; & Evert, H., 2000).

Biases of the WHOQOL-BREF. The WHOQOL-BREF is biased towards population-level assessment. Although the four domains accurately assess quality of life on a group level, Q1 and Q2 do not do so reliably. This test will be administered and results will be interpreted on a community level, which will reduce the biases of the survey. In addition, the global items (Q1 and Q2) are not included in the analysis of results, due to the inaccessibility of comparative data, as well as the low reliability of these items.

The World Bank Social Capital Assessment Tool – Adapted

The second construct to be measured is cognitive social capital. For this, the World Bank Social Capital Assessment Tool (adapted version) was used for data collection (renamed "Community Questionnaire", Appendix F). Permission for the use of this instrument was granted from The World Bank, Rights & Permissions, Office of the Publisher (Revzina, 2008). The original Social Capital Assessment Tool (SOCAT) is intended for in-depth analysis of a community's social capital on multiple dimensions. In the exploratory and descriptive phases of research, an abbreviated version of the SOCAT can be used (Grootaert & Bastelaer, 2002) to suit the needs of the community being assessed. Since the current study aims to describe the cognitive element of social capital only, the original SOCAT has been revised to make it shorter and more applicable to this specific population.

The original SOCAT consists of three instruments: Community Profile, Household Survey, and Organizational Profile. Two sections were used in this study, including questions from the "Community Characteristics" section of the Community Profile, along with questions from the "Cognitive Social Capital" section in the Household Survey. The first section, "Community Characteristics", is a description of the participants' demographic information, as well as the characteristics of the eco-communities in which the participants live. The second section, "Cognitive Social Capital", contains information about the dynamics of cognitive social capital operating within those eco-communities. This instrument is a measure of participant's attitudes, regardless of the degree of physical infrastructure in place at any of the locations. In this

way, it is an adequate measure for any community, whether it is in the forming stages or fully established.

Results from "Cognitive Social Capital" section of the SOCAT are used in two ways. First of all, it is used to describe participants' values as they relate to the importance placed upon built capital, human capital, social capital, and natural capital. Secondly, questions are asked about the foundations of a strong community, including the dimensions of: 1) solidarity, 2) trust, and 3) conflict resolution. This is followed by questions that ask respondents to compare their current eco-community to the most recent non-eco-community that they have lived in. This provides a means of comparing the foundations for a strong community between eco-communities and mainstream communities.

The SOCAT (adapted) was piloted on members of a smaller intentional community in British Columbia, whom the researcher has known from a previous work contract. Participants who completed the pilot test were asked whether the content was clear and if it provided an adequate representation of participants' attitudes. Feedback from the pilot test was used to revise the survey in a way that was more easily understandable for future participants.

Reliability and validity of the SOCAT. The SOCAT instrument was developed by The World Bank organization, and the developers claim that it is valid and reliable across a wide range of community, household, and institutional contexts (Grootaert & Bastelaer, 2002). Specific numbers were not provided, since the testing instruments are still in the development stage. The World Bank has provided these instruments for researchers to implement, and report back with results that can be used for normative data.

In practice, a lower level of item reliability is acceptable when the data are to be analyzed and reported at the group level than at the level of individual respondents (Gall, Gall, & Borg, 2007). This is applicable to the present study, in which the results will be analyzed at the group level.

Biases of the SOCAT. The SOCAT is intended for use on a community level, and therefore cannot measure individual characteristics. This instrument can be adapted in the exploratory phase of research, but then may not reflect validity across domains or reliability across populations (Grootaert & Bastelaer, 2002). Since this study is descriptive, and the results will be interpreted within this population (as opposed to being compared across populations), these concerns regarding the adapted version will not have significant effects on the test results or analysis of them.

Procedures

Representatives from each of the official B.C. eco-communities were contacted by email during the first two weeks of May, 2008. The researcher informed the representatives of the nature of the study, and obtained permission to mail surveys to the eco-communities (Appendix C). Representatives were asked how many surveys were needed in order to supply each adult resident/member of their community with the opportunity to complete one. When 6 or more survey packages were sent to a particular community, a poster (Appendix D) was included for the community representative to post in a common area, with surveys nearby, in order to capture the attention of community members. Each survey package included: 1) two letters of informed consent (Appendix E), 2) a two-part survey consisting of the WHOQOL-BREF and Community Questionnaire (Appendix F), and 3) a stamped return envelope with the researcher's

address on it. In the letter of informed consent, participants were instructed to keep one copy (two were provided) for their own records, since it contained information about the study as well as the researcher's contact information. Surveys were coded with a letter (A-P) to represent respondents from each community, i.e., a different letter for each community, not each individual. Surveys did not include any personally identifying information, providing partial anonymity to participants. The survey packages were then mailed to the communities during the last two weeks of May, 2008. Participants were given a due date (last day of August, 2008) to complete and return the survey, along with one signed copy of the informed consent.

Surveys were self-administered by paper and pen, on behalf of voluntary research participants from each of the communities. Due to an initial low-response rate, the researcher conducted a follow-up email request, as a reminder for participants to return their surveys. A second round of surveys was sent out at the beginning of September, 2008, to those communities who had requested the researcher to contact them at a later time. All surveys and informed consents were completed and returned to the researcher by October 30, 2008.

Methods of Analysis

Scoring

The WHOQOL-BREF produces a profile with four domain scores, and two individually scored items (Q1 and Q2) about an individual's overall quality of life. All domain scores are scaled in a positive direction. For the first four domains, the score range is from 1-100. For Q1 and Q2, scores range from 1-5. Raw domain scores are calculated by straightforward summative scaling of test items. Three negatively-worded

items are reverse-scored. Raw domain scores are then transformed to a 0-100 scale, with higher scores indicating higher quality of life. Scores from each domain are reported separately, as well as the summed overall score of quality of life. Results are reported as frequency responses in comparison with data from the WHOQOL international field trial.

Scores from the SOCAT-A are representative of the attitudes and opinions of each respondent in each domain, including community characteristics and each of the three domains of cognitive social capital (solidarity, trust, and conflict resolution). Responses are coded on an ordinal scale. From this, raw scores are summed and calculated as percentages. For example, "70% of respondents reported that the level of trust has improved in their community in the last three years." Percentages are intended to describe the level of cognitive social capital within eco-communities. Results are graphed for a visual representation of the data.

Data Analysis

Statistical data analysis is conducted on two levels, describing the characteristics of eco-communities in general, and then describing any significant differences between ecovillages and cohousing communities. Data from the WHOQOL-BREF is compared with results from the World Health Organization's international field trial (Skevington, Lofty, & O'Connell, 2004). Data analysis is performed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel.

Descriptive statistics are used to summarize questionnaire results, including measurements of central tendency (mean, median, and mode) and frequency counts (converted into percentages). Standard deviations (SD) are reported as appropriate, to

reflect the extent to which scores in each of the distributions deviate from their means - indicating the degree of variability between the types of communities in their responses.

The test of statistical significance used in this data analysis is the X^2. This test is able to determine whether data in the form of frequency counts is distributed significantly differently for certain responses from within a sample. Due to the limited number of survey respondents (n=34), it is difficult to draw any statistically significant results from this data. However, it is still highly relevant to report descriptive statistics and significant findings based on the responses that were given. In cases where there is a statistically significant finding, this result will be indicated by explicitly stating it as such ($p < 0.05$). The probability value (p) is the likelihood that a statistical result was obtained by chance alone. In the case of $p < 0.05$, there is a less than 5% chance that the result is due to chance. Small p-values suggest that the null hypothesis is unlikely to be true. The smaller the p-value, the more convincing is the rejection of the null hypothesis. In the social sciences, it is common practice to set the p-value at < 0.05 (Gall, Gall, & Borg, 2007). In the case of statistically non-significant findings, only the results that are highly relevant to the purposes of this study will be reported.

Chapter Four: Results

Community Descriptions

Thirty-four questionnaires were competed and returned to the researcher. Of

these, 24 respondents were from 4 different cohousing communities, and 10 respondents

were from 5 different ecovillage communities. From the Community Questionnaire,

51.5% (n = 17) of respondents reported that their community has existed for fewer than

five years, with the remaining 48.5% (n = 16) reporting that their community has existed

between five and nineteen years. Ecovillages (EV) and cohousing (CH) communities did

not show any considerable differences in length of community existence (Table 3). None

of the respondents reported that their community has existed for more than 20 years.

Table 3

Years of Community Existence

			Fewer than 5 years	Between 5 and 9 years	Between 10 & 19 years	Total
Type of Community	CH	Count	11	7	5	23
		% within Type of Community	47.8%	30.4%	21.7%	100.0%
	EV	Count	6	0	4	10
		% within Type of Community	60.0%	.0%	40.0%	100.0%
Total		Count	17	7	9	33
		% within Type of Community	51.5%	21.2%	27.3%	100.0%

The majority of participants (59.4%, n = 19) live in a community with a

population of fifty or more people. The remaining participants (37.6%, n = 12) live in a

community with a population of between five and forty-nine people. Only one respondent

(3.1%, n = 1) reported living in a community with fewer than five people, and this respondent was representative of one of the ecovillages. The remaining ecovillage (EV) respondents (90%, n = 9) reported a population of between five and nineteen members. This is in contrast to the 86.4% (n = 19) of cohousing (CH) respondents who reported a population of fifty or more residents in their communities, with the remaining 13.6% (n = 3) having a population of between five and forty-nine (Table 4).

Table 4

Population of Communities

| | | | # of People in Community | | | | |
			Fewer than 5	Between 5 - 19	Between 20 - 49	50 or more	Total
Type of Community	CH	Count	0	1	2	19	22
		% within Type of Community	.0%	4.5%	9.1%	86.4%	100.0%
	EV	Count	1	9	0	0	10
		% within Type of Community	10.0%	90.0%	.0%	.0%	100.0%
Total		Count	1	10	2	19	32
		% within Type of Community	3.1%	31.3%	6.3%	59.4%	100.0%

Thus, it appears as though cohousing communities tend to generally contain a larger population of people than ecovillages. This may be due to the apartment/townhouse style of housing units available at the cohousing communities, which tend to be representative of suburbs, as opposed to ecovillages which tend to be similar to actual villages with single-family detached housing units. In addition, cohousing communities tend to start up with a pre-determined amount of available living

spaces, whereas ecovillages are more capable of expanding with time and growing

interest.

Based on the survey results, 41.2% (n = 14) of communities have experienced an

increase in population, 47.1% (n = 16) have remained approximately the same, and

11.8% (n = 4) have decreased in population, as reported by the participants to the best of

their knowledge since the time that their communities were initially formed. The majority

of cohousing respondents (58.3%, n = 14) indicated that their communities have

remained the same, whereas the majority of ecovillage respondents (70%, n = 7)

indicated that their communities have increased in population since their initial

formations (Table 5).

Table 5

Population Growth

			Population Growth			
			Decreased	Remain the same	Increased	Total
Type of Community	CH	Count	3	14	7	24
		% within Type of Community	12.5%	58.3%	29.2%	100.0%
	EV	Count	1	2	7	10
		% within Type of Community	10.0%	20.0%	70.0%	100.0%
Total		Count	4	16	14	34
		% within Type of Community	11.8%	47.1%	41.2%	100.0%

When asked to explain the reason for this, one respondent from a cohousing

community wrote there is a "fixed number of homes with a fixed number of bedrooms".

This seems to be an accurate description of cohousing communities in general – as explained above. Ecovillages, on the other hand, tend to start off with a smaller number of living quarters, and then gradually expand over time as the demand for them increases.

When asked to chose their community's standard of living, given the options of "wealthy", "well-to-do", "average", or "poor", 87.9% (n = 29) rated their community as either "average" or "well-to-do". 100% (n = 23) of cohousing respondents chose these two responses, while ecovillage respondents displayed a wider range of responses. Of the ecovillage respondents, 10% (n = 1) chose "poor", 40% (n = 4) chose "average", 20% (n = 2) chose "well-to-do", and 30% (n = 3) chose "wealthy" (Table 6). This may be due to a subjective interpretation of the word "wealthy" – perhaps meaning that they live with an abundance of happiness and health as opposed to being financially wealthy.

Table 6

Standard of Living

			Standard of Living				Total
			Poor	Average	Well-to-do	Wealthy	
Type of Community	CH	Count	0	12	11	0	23
		% within Type of Community	.0%	52.2%	47.8%	.0%	100.0%
	EV	Count	1	4	2	3	10
		% within Type of Community	10.0%	40.0%	20.0%	30.0%	100.0%
Total		Count	1	16	13	3	33
		% within Type of Community	3.0%	48.5%	39.4%	9.1%	100.0%

Together, 82.8% (n = 24) of participants reported the availability of employment within their community as ranging from "minimally acceptable, but still okay" to

"exceptional", with 17.2% (n = 5) reporting the availability of employment as ranging

from "not really acceptable but almost there" to "unacceptable". There was a slight

difference between cohousing communities and ecovillages in this regard. 10.5% (n = 2)

of cohousing respondents reported the availability of employment as "not really

acceptable but almost there" to "unacceptable", compared with 30% (n = 3) of ecovillage

respondents who chose the same (Table 7).

Table 7

Availability of Employment

		Availability of Employment					
		Unacceptable	Not really acceptable, but almost there	Minimally acceptable, but still okay	Between minimally acceptable and exceptional	Exceptional	Total
CH	Count	1	1	7	7	3	19
		5.3%	5.3%	36.8%	36.8%	15.8%	100.0%
EV	Count	1	2	4	3	0	10
		10.0%	20.0%	40.0%	30.0%	.0%	100.0%
Total	Count	2	3	11	10	3	29
		6.9%	10.3%	37.9%	34.5%	10.3%	100.0%

Residents of cohousing communities indicated that their communities were often

part of a larger community in which residents were able to commute to work, but that the

community itself did not provide paid employment. Despite this, respondents indicated

being employed in a wide diversity of occupations, including college instructor, high

school teacher, physiotherapist, accountant, civil servant, stay-at-home mom, author,

artist, and gardener, among others. Interestingly, 20.6% (n = 5) of cohousing members

are retired. Ecovillage residents also indicated the necessity for either self-employment or

finding work in a nearby community, since the community itself was not able to provide its members with adequate employment opportunities. Occupations of ecovillage residents were also quite diverse, with most members holding more than one job title, including online university instructor, business manager, workshop facilitator, psychology student, nanny, bookkeeper, yoga teacher, counsellor, and several farmers.

Together, 72.4% (n = 21) reported the availability of housing in their community as ranging from "minimally acceptable, but still okay" to "exceptional", and 27.6% (n = 8) rated it as "not really acceptable but almost there" or "unacceptable". Cohousing communities faired slightly better in this regard, with only 21% (n = 4) rating the availability of housing as "not really acceptable but almost there" or "unacceptable", compared to 40% (n = 4) of ecovillage members who chose the same (Table 8).

Table 8

Availability of Housing

		Availability of Housing					
		Unacceptable	Not really acceptable, but almost there	Minimally acceptable, but still okay	Between minimally acceptable and exceptional	Exceptional	Total
CH	Count	2	2	5	8	2	19
		10.5%	10.5%	26.3%	42.1%	10.5%	100.0%
EV	Count	2	2	5	1	0	10
		20.0%	20.0%	50.0%	10.0%	.0%	100.0%
Total	Count	4	4	10	9	2	29
		13.8%	13.8%	34.5%	31.0%	6.9%	100.0%

When asked to report the quality of housing within their community, 94.1% (n = 32) of participants chose responses ranging from "minimally acceptable, but still okay" to

"exceptional". The trend indicates a slight difference favoring a higher quality of housing on behalf of cohousing residents, with 87.5% (n = 21) choosing these responses, whereas only 60% (n = 6) of ecovillage respondents chose the same (Table 9).

Table 9

Quality of Housing

		Quality of Housing					
		Unacceptable	Not really acceptable, but almost there	Minimally acceptable, but still okay	Between minimally acceptable and exceptional	Exceptional	Total
CH	Count	0	1	2	10	11	24
		0%	4.2%	8.3%	41.7%	45.8%	100.0%
EV	Count	0	1	3	4	2	10
		0%	10.0%	30.0%	40.0%	20.0%	100.0%
Total	Count	00	2	5	14	13	34
		0%	5.9%	14.7%	41.2%	38.3%	100.0%

Prior to living in the eco-community, 82.4% (n = 28) of all participants rated their level of happiness in the upper two categories of "between minimally and exceptionally happy" and "exceptionally happy" (Table 10). This percentage increased to 93.7% (n = 30) of all participants who chose the same responses when asked to rate their current level of happiness living in the eco-community (Table 11). Interestingly, one respondent actually became unhappy after moving to an ecovillage. Residents of cohousing communities and ecovillages together exhibited very similar percentages in response to this question - with the slight, but general trend being that those who rated themselves as "minimally happy but still okay" increased to a rating of "between minimally and exceptionally happy" after moving to their eco-community.

Table 10

Prior Happiness

		Prior Happiness					
		Unhappy	Not really happy, but almost there	Minimally happy, but still okay	Between minimally and exceptionally happy	Exceptional ly happy	Total
CH	Count	1	1	2	13	7	24
		4.2%	4.2%	8.3%	54.2%	29.2%	100.0%
EV	Count	0	1	1	6	2	10
		0%	10.0%	10.0%	60.0%	20.0%	100.0%
Total	Count	1	2	3	19	9	34
		2.9%	5.9%	8.8%	55.9%	26.5%	100.0%

Table 11

Current Happiness

		Current Happiness					
		Unhappy	Not really happy, but almost there	Minimally happy, but still okay	Between minimally and exceptionally happy	Exceptional ly happy	Total
CH	Count	0	1	0	13	8	24
		.0%	4.5%	.0%	59.1%	36.4%	100.0%
EV	Count	1	0	0	8	1	10
		10.0%	.0%	.0%	80.0%	10.0%	100.0%
Total	Count	1	1	0	21	9	34
		3.1%	3.1%	.0%	65.6%	28.1%	100.0%

In summary, both the cohousing and ecovillage communities in this study are relatively new types of communities, with 100% (n = 33) of them existing for fewer than 20 years. Cohousing communities tend to have larger populations than ecovillages, and also tend to hold a relatively constant number of people living there, whereas ecovillages more often experience growth in their populations. The standard of living in these communities is most often described as "average" or "well-to-do". When compared to ecovillages, cohousing communities exhibit a higher availability of employment, as well as higher availability and quality of housing. For these reasons, it seems accurate to describe cohousing communities as being more similar in nature to the mainstream communities found in typical Canadian cities. Ecovillages, on the other hand, represent more of a departure from this norm, and as such, may experience more of a struggle in achieving the standard of living and conveniences of modern-day living. Interestingly, 30% (n = 3) of ecovillage respondents claimed their standard of living as "wealthy", despite these difficulties, whereas no one from the cohousing communities responded in the same manner. Finally, members from both eco-communities generally experienced an increase in their overall levels of happiness after moving to their current communities.

Quality of Life Results

From the World Health Organization's (WHO) international field trial (Skevington, Lofty, & O'Connell, 2004), results were reported in the form of frequency response rates (%) for each item of the WHOQOL-BREF. N scores were not reported for individual items or domains. All responses from all items were summed to give an overall picture of Quality of Life (QOL). Of 11,830 respondents, 4% chose "Very Poor" as their response to specific items within the WHOQOL-BREF, 12.5% chose "Poor",

28% chose "Neither Poor nor Good", 38 % chose "Good", and 17.5% chose "Very

Good". These percentages do not represent participants' QOL scores per se, but instead

show how participants' chose to answer the survey questions (Figure 1). Mean scores

were reported for the four domains of Physical (mean = 16.2, SD = 2.9), Psychological

(mean = 15, SD = 2.8), Social (mean = 14.3, SD = 3.2), and Environment (mean = 13.5,

SD = 2.6) (Figure 2). Mean scores for the two global items were not reported and so will

not be available for comparison.

Members and residents of eco-communities that participated in this study showed

a final QOL score of 82%. Ecovillages scored 81% and co-housing communities scored

83%, thus indicating only a slight amount of variance between them (Table 12). For this

reason, QOL results will be combined from both eco-communities and reported together.

Final QOL scores from the International Field Trial were not reported, and so will not

available for comparison.

Table 12

Final Quality of Life Scores from the WHOQOL-BREF

Type of Community	N	Global Items	Domains					Final Scores
		Overall Health	Physical	Psychol -ogical	Social	Environ -ment	
Cohousing	24	0.87	0.86	0.8	0.77	0.85		0.83
Ecovillage	10	0.81	0.8	0.83	0.81	0.79		0.81
Eco-community	34	0.85	0.84	0.81	0.78	0.83		0.82

Results from this study were reported in the form of frequency response rates (%) for each item of the WHOQOL-BREF in order to compare to the frequency response rates from the WHOQOL-BREF international field trial. All responses from all items were summed to give an overall picture of Quality of Life (QOL). Of the 34 participants in this study, 0.7% chose "Very Poor" as their response to specific items within the WHOQOL-BREF, 5.7% chose "Poor", 10.6% chose "Neither Poor nor Good", 45.8% chose "Good", and 37.1% chose "Very Good". Results from eco-communities were compared to the results from the international field trial as represented in Figure 1 below. The trend is for eco-community respondents to choose the responses "Good" and "Very Good" more often than respondents from the international field trial.

Quality of Life Frequency Responses
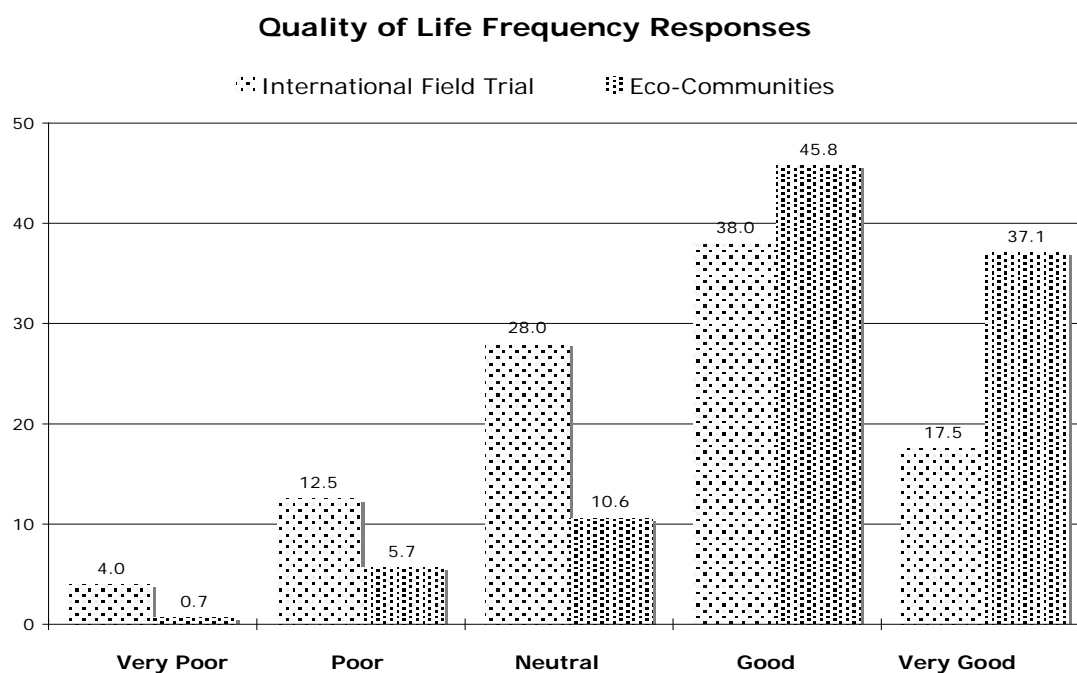
Figure 1. Frequency Responses (%) for Items of the WHOQOL-BREF

Mean scores were calculated in the four domains of Physical (mean = 16.8, SD = 2.1), Psychological (mean = 16.2, SD = 1.8), Social (mean = 15.6, SD = 2.9), and

Environment (mean = 16.7, SD = 2.4). These scores were compared to mean domain

scores from the results of the international field trial, and are represented in Figure 2

below. Since raw data was not provided from the international field trial, it is not possible

to determine if there are statistically significant differences between mean domain scores.

The trend is that eco-community respondents tend to have a higher perceived quality of

life in all domains, when compared to the international field trial.

QOL Mean Domain Scores
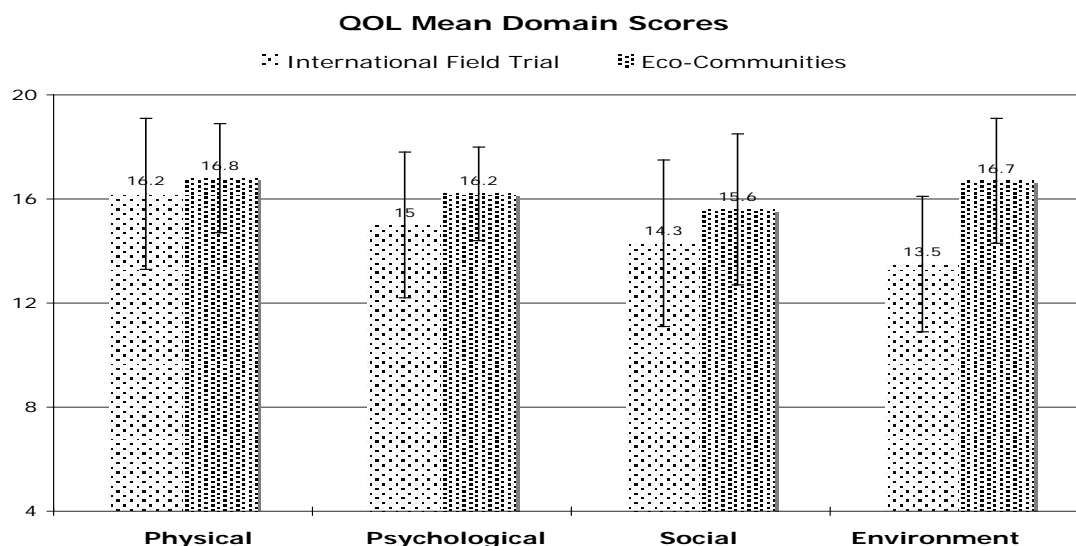
Figure 2. Mean Domain Scores of the WHOQOL-BREF

Social Capital Results

In the Community Questionnaire, participants were asked to number, in order

(with 1 being the most important, and 4 being the least important), the importance of

these ideas to them: owning purchased or rented goods (built capital), access to education

and healthcare (human capital), interactions with community members, friends, and

family (social capital), and interactions with natural spaces (natural capital). Differences

were found between the responses of cohousing (CH) and ecovillage (EV) residents, with

one significant difference in the value placed on social capital. Descriptive statistics are

Table 13

Descriptive Statistics for Types of Capital, sorted by Community

Type of Community			Built Capital	Human Capital	Social Capital	Natural Capital
CH	N	Valid	23	23	23	23
		Missing	1	1	1	1
	Mean		3.91	2.61	1.13	1.96
	Median		4.00	3.00	1.00	2.00
	Mode		4	3	1	2
	Std. Deviation		.288	.656	.344	.767
EV	N	Valid	10	10	10	10
		Missing	0	0	0	0
	Mean		4.00	2.80	1.50	1.60
	Median		4.00	3.00	1.50	1.50
	Mode		4	3	1[a]	1
	Std. Deviation		.000	.422	.527	.699
a. Multiple modes exist. The smallest value is shown						
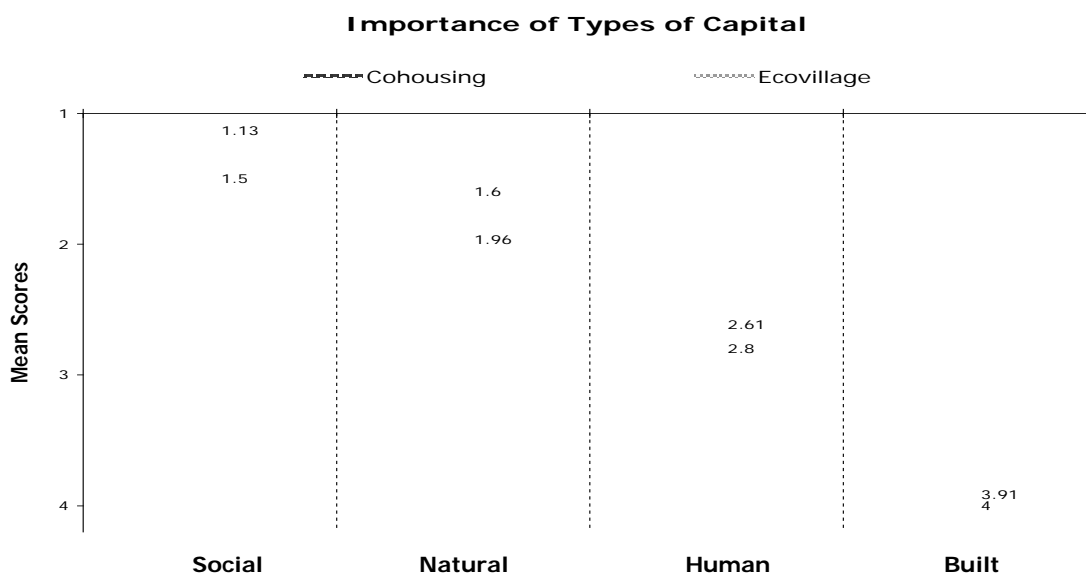
Figure 3. Mean Scores Indicating Importance of Different Types of Capital

shown in Table 13. As shown in Figure 3, the types of capital are placed in order of importance based on the mean scores.

Social Capital

When comparing means between cohousing (mean = 1.13) and ecovillages (mean = 1.5), both groups rated social capital as being the most important type of capital (on a scale of 1 to 4, with 1 indicating the most important, and 4 indicating the least important) (Figure 3). In cohousing communities, 87% (n = 20) of respondents rated social capital as the most important, and 13% (n = 3) rated it as moderately important (Figure 4). In ecovillages, 50% (n = 5) of respondents rated social capital as the most important, and 50% (n = 5) rated is as moderately important (Figure 5). Although ecovillage respondents were equally split in rating social capital as either most important or moderately important, a comparison of the means shows a slighter higher importance attached to social capital (Table 13). Together, 75.8% (n = 25) of respondents rated social capital as the most important, and 24.2% (n = 8) rated it as moderately important.
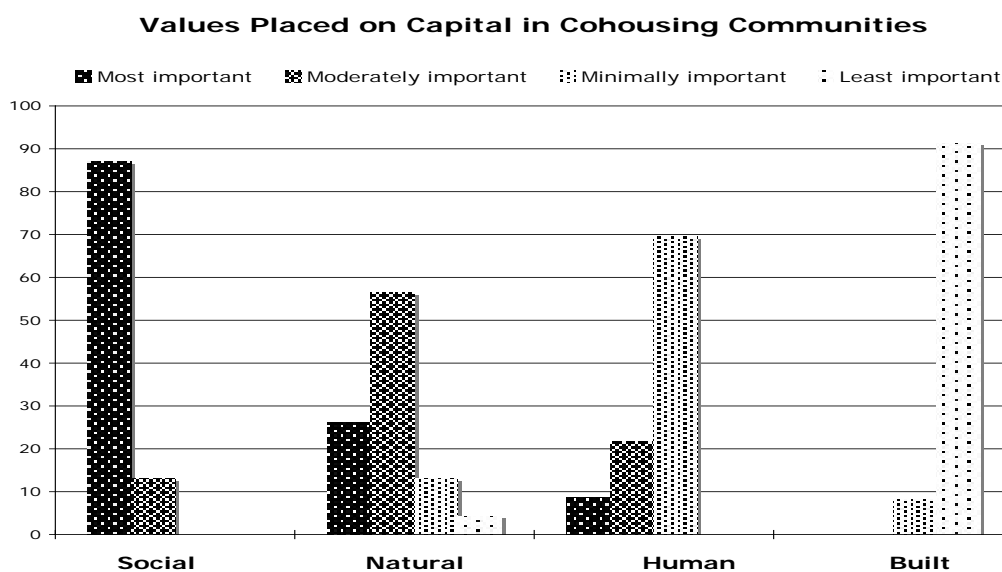
Figure 4. Values Placed on Different Types of Capital in Cohousing Communities

Values Placed on Capital in Ecovillages
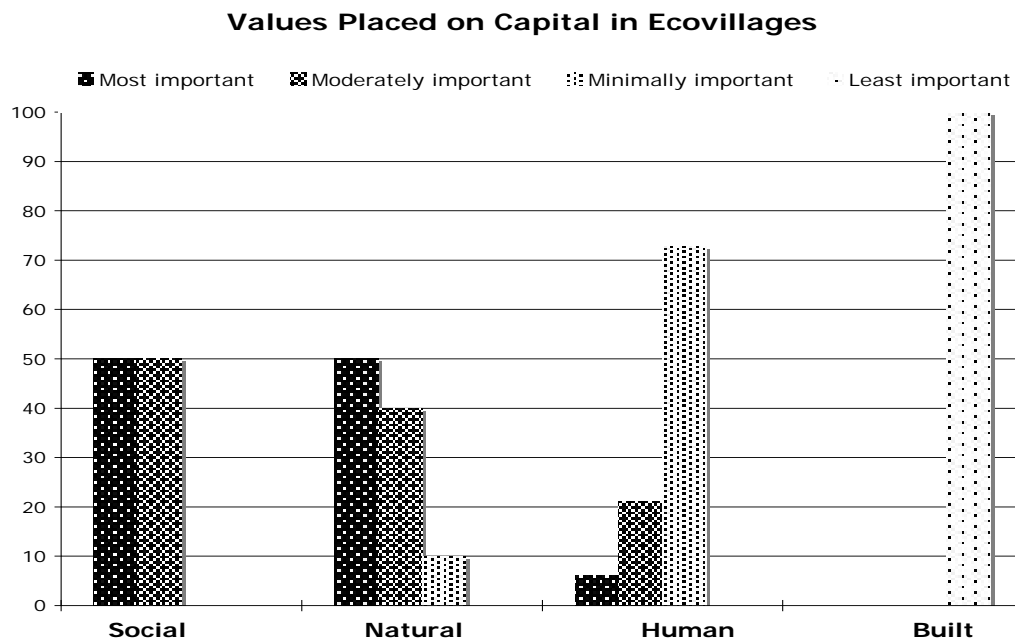
Figure 5. Values Placed on Different Types of Capital in Ecovillage Communities

　　　　Cohousing respondents chose social capital as the "most important" type of

capital significantly more often than ecovillage respondents did (X^2, $p < 0.05$) (Table 14).

Within the category of social capital, cohousers chose "most important" 80% of the time,

whereas ecovillagers choose "most important" the remaining 20% of the time (Table 15).

Table 14

Social Capital Chi-Square

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	5.183[a]	1	.023		
Continuity Correction[b]	3.366	1	.067		
Likelihood Ratio	4.880	1	.027		
Fisher's Exact Test				.036	.036
N of Valid Cases	33				
a. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.42.					
b. Computed only for a 2x2 table					

Table 15

Social Capital Cross-Tabs

			Type of Community		
			CH	EV	Total
Social Capital	most important	Count	20	5	25
		% within Social Capital	80.0%	20.0%	100.0%
		% within Type of Community	87.0%	50.0%	75.8%
		% of Total	60.6%	15.2%	75.8%
	moderately important	Count	3	5	8
		% within Social Capital	37.5%	62.5%	100.0%
		% within Type of Community	13.0%	50.0%	24.2%
		% of Total	9.1%	15.2%	24.2%
Total		Count	23	10	33
		% within Social Capital	69.7%	30.3%	100.0%
		% within Type of Community	100.0%	100.0%	100.0%
		% of Total	69.7%	30.3%	100.0%

Natural Capital

When comparing means between cohousing (mean = 1.96) and ecovillages (mean = 1.6), natural capital was rated as being the second most important type of capital (on a scale of 1 to 4, with 1 indicating the most important, and 4 indicating the least important). It is important to note that among ecovillage respondents, there was a very similar importance attached to both social capital (mean = 1.5) and natural capital (mean = 1.6), with only 0.1 of a difference in means. Social and natural capital both showed a median of 1.5 and a mode of 1, with only the mean distinguishing social capital as being more important (Table 13). This pattern of responses indicates that members/residents of eco-

communities place a higher emphasis on both social and natural capital, over built and human capital.

In cohousing communities, 26.1% (n = 6) of respondents rated natural capital as the most important, 56.5% (n = 13) rated it as moderately important, 13% (n = 3) rated it as minimally important, and 4.3% (n = 1) rated it as least important (Figure 4). In ecovillages, 50% (n = 5) of respondents rated natural capital as most important, 40% (n = 4) rated is as moderately important, and 10% (n = 1) rated is as minimally important (Figure 5). Together, 33.3% (n = 11) of respondents rated natural capital as the most important, 51.5% (n = 17) rated it as moderately important, 12.1% (n = 4) rated is as minimally important, and 3% (n = 1) rated it as least important.

Human Capital

The mean ratings of human capital in cohousing (mean = 2.61) and ecovillages (mean = 2.8) indicate that both groups rated human capital as being the third most important type of capital (on a scale of 1 to 4, with 1 indicating the most important, and 4 indicating the least important), with not much difference between groups. In cohousing communities, 8.7% (n = 2) of respondents rated human capital as the most important, 21.7% (n = 7) rated it as moderately important, and 69.6% (n = 24) rated is as minimally important (Figure 4). In ecovillages, 20% (n = 2) of respondents rated human capital as moderately important, and 80% (n = 8) rated is as minimally important (Figure 5). Together, 6.1% (n = 2) of respondents rated human capital as the most important, 21.2% (n = 7) rated it as moderately important, and 72.7% (n = 24) rated is as minimally important.

Built Capital

The mean ratings of built capital in cohousing (mean = 3.91) and ecovillages

(mean = 4.0) indicate that both groups rated built capital as being the least important type

of capital (on a scale of 1 to 4, with 1 indicating the most important, and 4 indicating the

least important). Ecovillage residents did this unanimously, with 10 out of 10 respondents

ranking it as last in order of importance (SD = 0) (Table 13). In cohousing communities,

8.7% (n = 2) of respondents rated built capital as minimally important, and 91.3% (n =

21) rated it as the least important (Figure 4). In ecovillages, 100% (n = 10) of the

respondents rated built capital as the least important (Figure 5). Together, 6.1% (n = 2) of

respondents rated built capital as minimally important, and 93.9% (n = 31) rated it as the

least important. This result supports the literature, most notably the findings from

Mulder, Costanza, and Erickson (2005).

<center>*Foundation of a Strong Community Results*</center>

Eco-community participants were asked questions about the building blocks

necessary for creating a strong community that will last over time. Based on the literature

review, the foundation for a strong community is made up of three basic domains

including solidarity, trust, and conflict resolution (Grootaert & Van Bastelaer, 2002).

Given the choices of "exceptional", "good", "fair", and "poor", participants were asked to

rate their communities in each of the three domains. These scores were calculated out of a

total of four points, with 4 indicating an exceptional amount, 3 indicating a good amount,

2 indicating a fair amount, and 1 indicating a poor amount. Responses from each

community were calculated to show mean response rates in each of the three domains

(Table 16).

Table 16

Foundation of a Strong Community Eco-community Mean Responses

Type of Community			Solidarity	Trust	Conflict Resolution
CH	N	Valid	24	23	24
		Missing	0	1	0
	Mean		3.96	3.39	3.63
EV	N	Valid	10	10	10
		Missing	0	0	0
	Mean		3.80	3.40	3.50

Cohousing respondents rated their communities, on average: 3.96 in the domain

of Solidarity, 3.39 in the domain of Trust, and 3.63 in the domain of Conflict Resolution.

Ecovillage respondents showed very similar results, rating their communities, on average:

3.8 in the domain of Solidarity, 3.4 in the domain of Trust, and 3.5 in the domain of

Conflict Resolution. These response patterns are graphed in Figure 6.
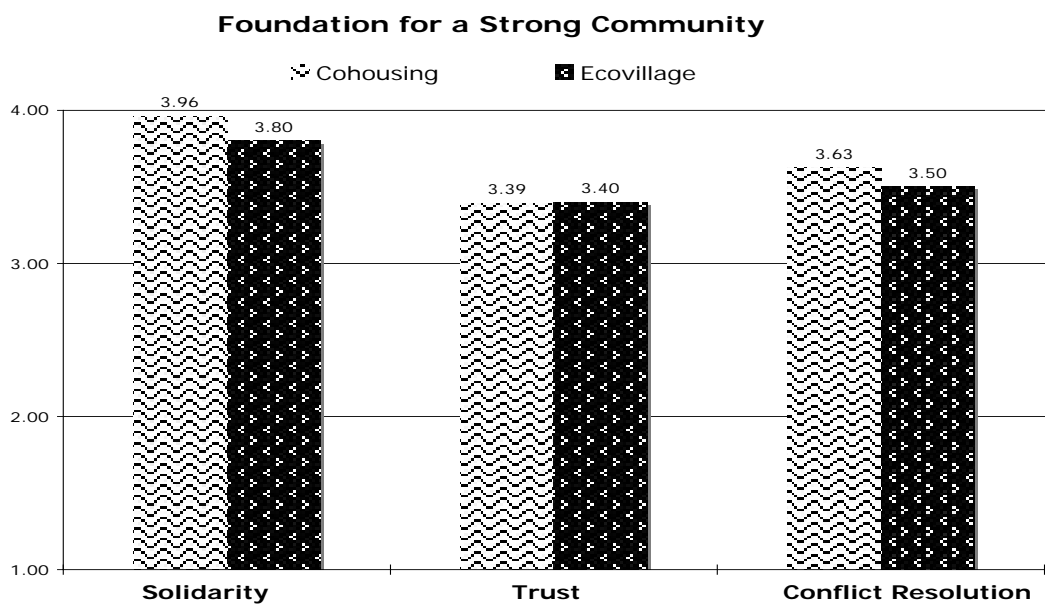
Figure 6. Foundation of a Strong Community Eco-community Mean Responses

Since the mean responses were very similar between cohousing and ecovillage communities, it is relevant to analyze the differences between them. This was done by calculating frequency response rates for the two types of communities in the categories of "exceptional", "good", "fair", and "poor". Frequency responses are shown in Table 17.

Table 17

Foundation of Strong Community Frequency Table

Solidarity						
Type of Community			Frequency	Percent	Valid %	Cumulative %
CH	Valid	Exceptional	23	95.8	95.8	95.8
		Good	1	4.2	4.2	100.0
		Total	24	100.0	100.0	
EV	Valid	Exceptional	8	80.0	80.0	80.0
		Good	2	20.0	20.0	100.0
		Total	10	100.0	100.0	

Trust						
Type of Community			Frequency	Percent	Valid %	Cumulative %
CH	Valid	Exceptional	10	41.7	43.5	43.5
		Good	12	50.0	52.2	95.7
		Fair	1	4.2	4.3	100.0
		Total	23	95.8	100.0	
	Missing	System	1	4.2		
	Total		24	100.0		
EV	Valid	Exceptional	7	70.0	70.0	70.0
		Good	1	10.0	10.0	80.0
		Fair	1	10.0	10.0	90.0
		Poor	1	10.0	10.0	100.0
		Total	10	100.0	100.0	

Conflict Resolution						
Type of Community			Frequency	Percent	Valid %	Cumulative %
CH	Valid	Exceptional	15	62.5	62.5	62.5
		Good	9	37.5	37.5	100.0
		Total	24	100.0	100.0	
EV	Valid	Exceptional	5	50.0	50.0	50.0
		Good	5	50.0	50.0	100.0
		Total	10	100.0	100.0	

Responses are also graphed as percentages in Figures 7 and 8. In the domain of Solidarity, 95.8% (n = 23) of cohousing respondents rated their communities as "exceptional", and 4.2% (n = 1) rated their communities as "good". In comparison, 80% (n = 8) of ecovillage respondents rated their communities as "exceptional", and 20% (n = 2) rated their communities as "good". In the domain of Trust, 43.5% (n = 10) of cohousing respondents rated their communities as "exceptional", 52.2% (n = 12) chose "good", and 4.3% (n = 1) chose "fair". In comparison, 70% (n = 7) of ecovillage respondents rated their communities as "exceptional", 10% (n = 1) chose "good", 10% (n = 1) chose "fair", and 10% (n = 1) chose "poor". In the domain of Conflict Resolution, 62.5% (n = 15) of cohousing respondents rated their communities as "exceptional", and 37.5% (n = 9) rated their communities as "good". In comparison, 50% (n = 5) of ecovillage respondents rated their communities as "exceptional" and 50% (n = 5) rated their communities as "good".

Cohousing Foundation of Strong Community

■ Exceptional　　Ⅱ Good　　＝ Fair
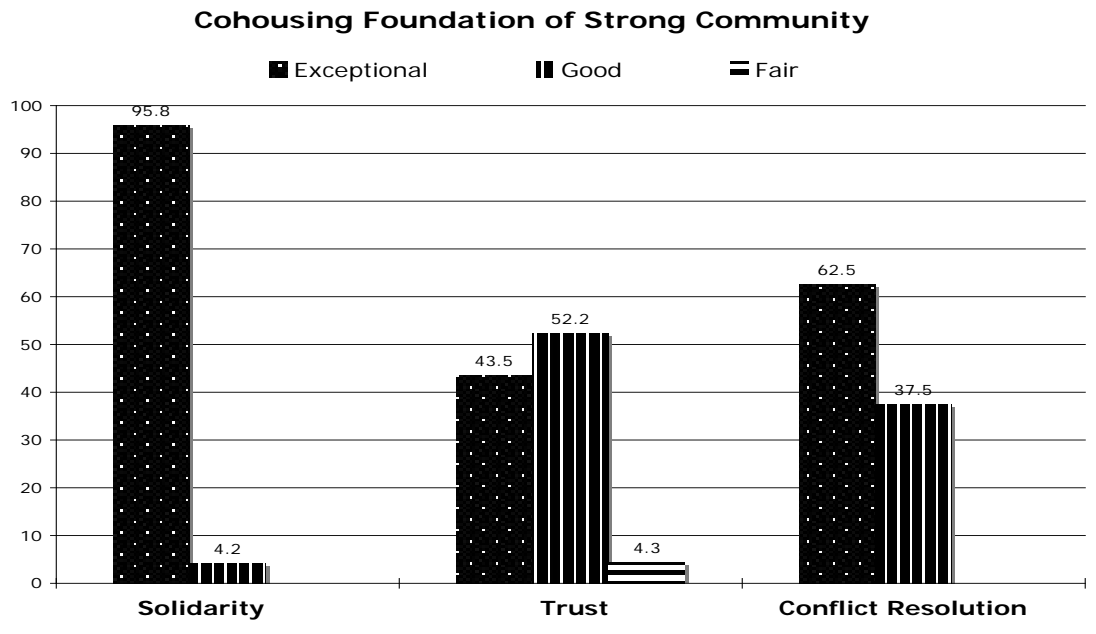
Figure 7. Foundation of a Strong Community Cohousing Frequency Responses (%)

Ecovillage Foundation of Strong Community

■ Exceptional　　Ⅱ Good　　＝ Fair　　· Poor
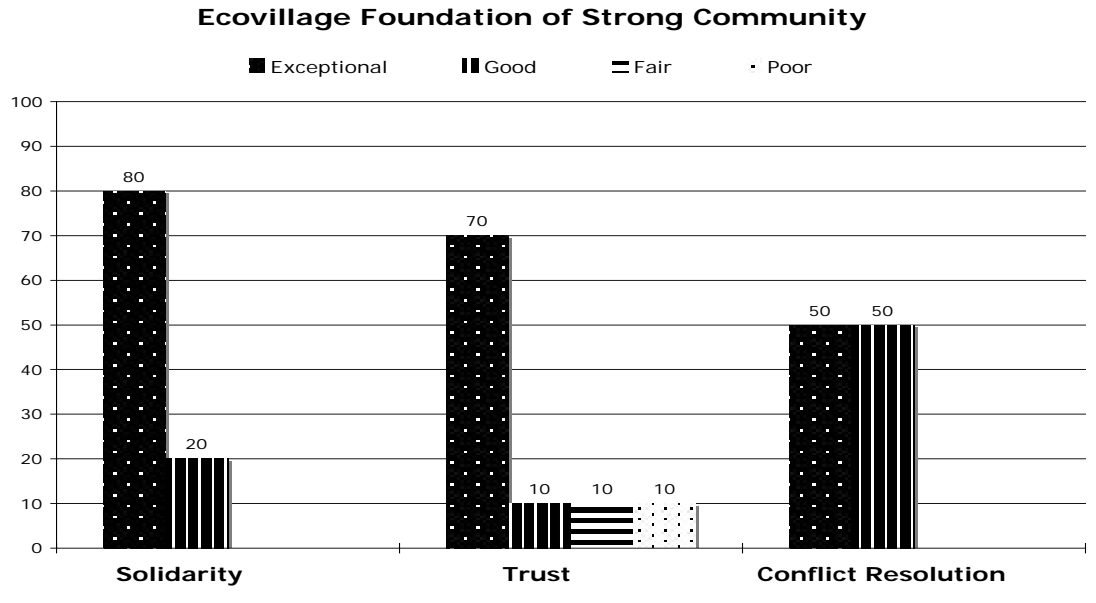
Figure 8. Foundation of a Strong Community Ecovillage Frequency Responses (%)

Eco-community participants were asked to compare their current communities to the most recent non-eco-community town or neighborhood that they have lived in. In each of the domains of solidarity, trust, and conflict resolution, participants were given the choices of "more than other towns/neighborhoods", "the same as other towns/neighborhoods", or "less than other towns/neighborhoods". Frequency responses are depicted in Table 18.

Table 18

Foundation of Strong Community Comparative Frequency Table

Comparative Solidarity					
		Frequency	Percent	Valid %	Cumulative %
Valid	More than other towns/neighborhoods	27	79.4	84.4	84.4
	The same as other towns/neighborhoods	5	14.7	15.6	100.0
	Total	32	94.1	100.0	
Missing	System	2	5.9		
Total		34	100.0		

Comparative Trust					
		Frequency	Percent	Valid %	Cumulative %
Valid	More than other towns/neighborhoods	28	82.4	87.5	87.5
	The same as other towns/neighborhoods	4	11.8	12.5	100.0
	Total	32	94.1	100.0	
Missing	System	2	5.9		
Total		34	100.0		

Comparative Conflict Resolution Skills					
		Frequency	Percent	Valid %	Cumulative %
Valid	More than other towns/neighborhoods	31	91.2	93.9	93.9
	The same as other towns/neighborhoods	2	5.9	6.1	100.0
	Total	33	97.1	100.0	
Missing	System	1	2.9		
Total		34	100.0		

Responses from both cohousing and ecovillages were calculated together, due to their high degree of similarity (Figure 9). In the domain of Solidarity, 15.6% (n = 5) of eco-community respondents rated their current communities "the same as" other non-eco-communities, and 84.4% (n = 27) rated their communities as having a higher degree of solidarity than other non-eco-communities. In the domain of Trust, 12.5% (n = 4) of eco-community respondents rated their current communities "the same as" other non-eco-communities, and 87.5% (n = 28) rated their communities as being more trusting other non-eco-communities. In the domain of Conflict Resolution, 6.1% (n = 2) of eco-community respondents rated their current communities "the same as" other non-eco-communities, and 93.9% (n = 31) rated their communities as investing more time into conflict resolution strategies than other non-eco-communities.

Comparative Foundation for Strong

■ Same As Other Neighborhoods   ⊡ More Than Other Neighborhoods
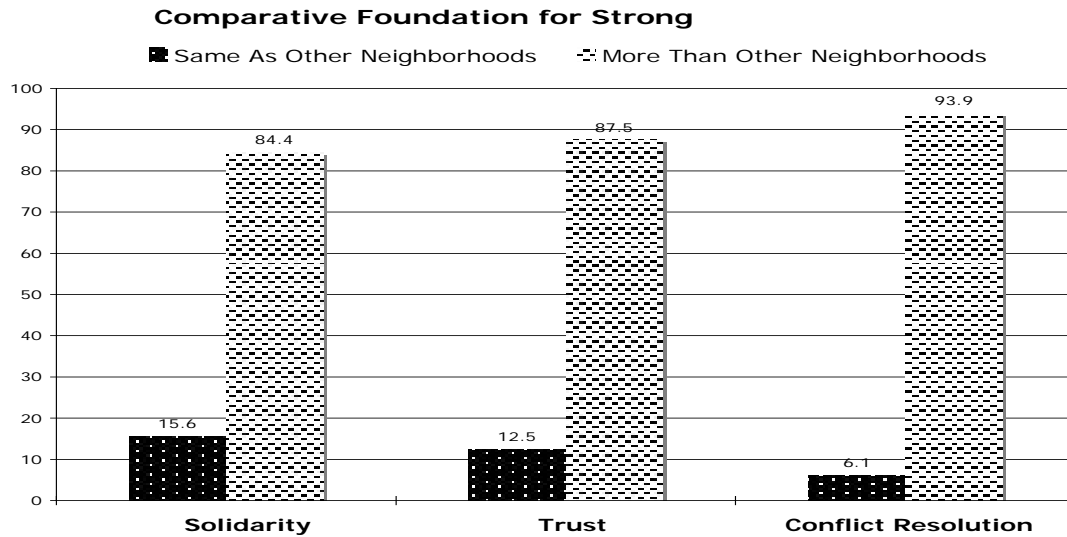
Figure 9. Foundation of a Strong Community Comparative Frequency Responses (%)

Eco-community respondents rated their communities as investing in Conflict Resolution strategies significantly more often (X^2, $p < 0.05$) than other non-eco-communities (Table 19), with 100% (n = 23) of cohousing participants and 80% (n = 8) of ecovillage participants choosing this response (Table 20).

Table 19

Foundation of Strong Community Comparative Chi-Square

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	4.897[a]	1	.027		
Continuity Correction[b]	2.014	1	.156		
Likelihood Ratio	5.082	1	.024		
Fisher's Exact Test				.085	.085
N of Valid Cases	33				
a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is .61.					
b. Computed only for a 2x2 table					

Table 20

Comparative Conflict Resolution Skills Cross-Tabs

		Type of Community		
		CH	EV	Total
More than other towns/ neighbor-hoods	Count	23	8	31
	% within Comparative Conflict Resol. Skills	74.2%	25.8%	100.0%
	% within Type of Community	100.0%	80.0%	93.9%
	% of Total	69.7%	24.2%	93.9%
The same as other towns/ neighbor-hoods	Count	0	2	2
	% within Comparative Conflict Resol. Skills	.0%	100.0%	100.0%
	% within Type of Community	.0%	20.0%	6.1%
	% of Total	.0%	6.1%	6.1%
Total	Count	23	10	33
	% within Comparative Conflict Resol. Skills	69.7%	30.3%	100.0%
	% within Type of Community	100.0%	100.0%	100.0%
	% of Total	69.7%	30.3%	100.0%

In summary, eco-communities rated social capital as being the most important type of capital followed respectively by natural, human, and built capital. In ecovillages, natural capital was rated as being nearly as important as social capital. Cohousing respondents chose social capital as the "most important" type of capital significantly more often than ecovillage respondents did. Furthermore, both eco-communities appear to have in place the building blocks of a strong community that will last over time. They rated their current communities as having higher levels of solidarity, trust, and conflict resolution skills than other non-eco-communities they have lived in. Eco-community respondents rated their communities as investing in conflict resolution strategies significantly more often than other non-eco-communities.

Chapter Five: Discussion

Quality of Life Discussion

In terms of quality of life, the top two categories that eco-community respondents rated themselves in were "Good" and "Very Good". The top two categories that respondents from the international field trial rated themselves in were "Neutral" and "Good". In addition, eco-community respondents rated themselves higher than the international respondents in all four domains of physical health, psychological health, social relationships, and environment. Based on this pattern of responses, these results suggest that the eco-community respondents from this study have generally experienced a better perceived quality of life than the sample of respondents from the international field trial.

In reference to Figure 2 (mean scores), eco-community participants rated themselves 0.6 of a point higher than participants from the international field trial in the domain of physical health, 1.2 points higher in psychological health, 1.3 points higher in the social relationships domain, and 3.2 points higher in the domain of environment. These results suggest that despite only a small difference in the domain of physical health, which can have a dramatic effect on quality of life, eco-community residents perceived their quality of life as being higher in all other domains as well. The largest difference was in the domain of environment. This domain asked questions about participants' financial resources, access to information, transportation, recreation and leisure, health and social care, physical safety and comfort, as well as the health and comfort of their home environment and physical environment (World Health Organization, 2004). Since this domain showed the largest difference between

populations it is worth considering why that might be. One possible answer may be due to the "intentional" nature of these eco-communities – where residents decide to live and/or work based on common shared values. In particular, this study focused on intentional communities that shared the value of living in more environmentally sustainable ways than the mainstream society around them. If community residents all value the health of their environment, it is reasonable to assume that more effort will be put into having it be a safe and positive place to live. This may have affected participants' subjective experiences of the quality of their surrounding environment and community.

Although the differences are small, it appears as though eco-community residents show consistently higher scores in all domains of Quality of Life, when compared to results from the WHOQOL group's international field trial. Overall, from the results of the WHOQOL-BREF and the comparative data, it can be said that eco-community residents seem to experience a high Quality of Life.

<div align="center">Social Capital Discussion</div>

From the results of the community questionnaire, both groups rated social capital as being the most important type of capital (cohousing social capital mean = 1.13, ecovillage social capital mean = 1.5) (Table 13). Cohousing respondents chose social capital as the "most important" type of capital significantly more often than ecovillage respondents did (X^2, $p < 0.05$) (Table 14). When comparing means (cohousing natural capital mean = 1.96, ecovillage natural capital mean = 1.6), both groups rated natural capital as being the second most important type of capital. It is important to note that among eco-village respondents, there was a very similar importance attached to both social and natural capital. Social and natural capital both showed a median of 1.5 and a

mode of 1, with only the mean distinguishing social capital as being more important (Table 13).

It would be interesting to see how these results might change with a larger sample of eco-village respondents. However, the current results suggest that there is a very similar importance placed on both social and natural capital amongst ecovillage residents. This seems fitting, considering the structural components and shared values of ecovillages. In contrast to cohousing communities, ecovillages are described as exhibiting more of a departure from mainstream society with a stronger emphasis placed on being self-sufficient and "off the grid" (Leafe-Christian, 2007). These notions would favor a closer and more harmonious relationship with the land, perhaps more importantly than having a close and harmonious relationship with community members – as would more often be the case in cohousing communities, based on the available literature.

These results also confirm the findings from Mulder, Costanza, and Erickson (2005). In their study, a survey was administered to intentional community (IC) residents, investigating the status of four basic types of capital (built, human, social, and natural), and their effects on residents' perceived quality of life. It was found that IC's have a better balance between these four types of capital than non-intentional communities, and this contributes to IC residents' higher self-reported quality of life. In particular, within IC's, a higher importance is placed on social capital, substituting for and reducing the importance of built capital. In other words, interactions with community, friends, and family are considered more important than owning goods or receiving a high income. This means than a higher quality of life is reported by IC residents, despite lower levels

of material consumption, as compared to the control group (survey administered to neighborhoods in Burlington, VT, USA).

Based on the results of Mulder, Costanza, and Erickson's (2005) study, it seems reasonable to assume that the status of social capital and quality of life in eco-communities is similar to that of other IC's. Eco-communities demonstrate a higher importance placed on sustainability and energy-efficiency than other types of IC's in general. Indeed, the results of this study confirm that eco-communities exhibit a lower importance placed on built capital, and a higher emphasis placed on both social and natural capital. The relationship between these values and quality of life, however, is yet to be determined scientifically. Yet it is worth mentioning that eco-community respondents did report a higher quality of life than the comparative group, and this portrays a similar trend as that found in Mulder, Costanza, and Erickson's (2005) study. In summary, eco-community residents report a high Quality of Life and value the importance of Social Capital over other types of capital. However, this study does not confirm a cause-and-effect relationship between these two variables.

Foundation of a Strong Community Discussion

In looking at the mean responses for each of the domains of Solidarity, Trust, and Conflict Resolution – the building blocks for a strong community – both cohousing and ecovillages rated their communities as very similar (Table 16). In the domain of Solidarity, cohousing communities rated themselves only 0.16 points higher, on average, than ecovillages rated themselves. In the domain of Trust, cohousing communities rated themselves 0.01 points lower, on average, than ecovillages. In the domain of Conflict Resolution, cohousing communities rated themselves only 0.13 points higher, on average,

than ecovillages rated themselves. From these results, both groups show mean responses that reflect a high degree of solidarity, trust, and conflict resolution within their communities. Cohousing communities rated themselves slightly higher than ecovillages did with regards to Solidarity and Conflict Resolution. Means scores were nearly identical in the domain of Trust.

Overall, the differences between groups are very small, and this could indicate a degree of internal reliability amongst the test questions. In other words, since both cohousing and ecovillages chose very similar responses in these domains, it represents not only a high degree of similarity between the two groups, but also consistency in the interpretation of the questions.

Due to the very similar scores between groups, it becomes more important to look at how these responses were spread out across groups (Table 17). In the domain of Solidarity, cohousing respondents rated their communities as "exceptional" slightly more often ecovillage respondents did – 95.8% (n = 23) compared to 80% (n = 8) respectively. The remaining responses fell into the "good" category. In the domain of Trust, cohousing respondents showed a nearly equal division between "exceptional" and "good", with 95.7% (n = 22) of respondents choosing one of these two responses. In ecovillages, the majority (70%, n = 7) of respondents chose "exceptional". Of the remaining ecovillage respondents, 10% (n = 1) chose "good", 10% (n = 1) chose "fair", and another 10% (n = 1) chose "poor". This was the only time that "poor" was chosen in response to the questions in this portion of the data analysis (foundation of a strong community). The respondent who chose "poor" is the only representative from that particular ecovillage who chose to participate in the study (together, there were representatives from four

different ecovillages). Comparing groups, responses in the Trust domain were more spread out than in the other domains, indicating more variably amongst respondents in this regard. In the domain of Conflict Resolution, cohousing respondents chose "exceptional" 62.5% (n = 15) of the time, and "good" 37.5% (n = 9) of the time. In ecovillages, there was a 50/50 split between "exceptional" (n = 5) and "good" (n = 5). This indicates a slightly better perception of conflict resolution tactics amongst cohousers than ecovillagers.

Overall, both cohousing and ecovillage communities indicate relatively high scores in all three domains of Solidarity, Trust, and Conflict Resolution. There were slight differences, with cohousing respondents rating themselves higher in Solidarity and Conflict Resolution. The domain of Trust showed the most variability in responses, even though mean scores were nearly identical. Even though mean scores were high in all three domains, they are only in relation to the responses from other eco-community respondents, and not in comparison to respondents from any mainstream communities. Eco-community participants were asked to compare their communities to other non-eco-communities in the same three domains. The majority of eco-community participants rated their communities as having more solidarity, more trust, and more conflict resolution strategies than the most recent non-eco-community that they had lived in. Eco-community respondents rated their communities as investing in conflict resolution strategies significantly more often (X^2, p < 0.05) than other non-eco-communities (Table 19), with 100% (n = 23) of cohousing participants and 80% (n = 8) of ecovillage participants choosing this response (Table 20). Not one participant chose "less than" other communities in response to any of these questions.

Implications

Sustainable Development and Living Practices

The results of this study suggest that the eco-communities in this study are able to provide their residents with a high quality of life while living in environmentally sustainable ways. They are able to consume less material resources without suffering from a reduced quality of life. The way this is accomplished is through a higher value placed on social and natural capital, as opposed to built capital. In other words, healthy interactions with people and the environment are considered a priority over having access to material goods. This benefits not only the environment and communities, but also individuals by enhancing psychological sense of community and subjective emotional well-being – which are both aspects of mental wellness. In addition, the eco-communities in this study display high levels of solidarity, trust, and conflict resolution strategies – indicating they have the necessary building blocks for a strong community that will last over time. The majority of eco-community respondents claim that these three dimensions exist more often in their communities than compared to other non-eco-communities they have lived in, with significantly more effort being invested in conflict resolution strategies. Overall, the eco-communities in this study have demonstrated high degrees of social capital, representing an importance placed on interactions between community members, as well as having a foundation in place that will help to build a strong and sustainable community that will last over time.

One of the explicit purposes of most eco-communities is to serve as role models for other communities. To varying degrees, eco-communities have implemented workable solutions to modern-day problems that seem to encompass many areas from

politics to a lack of spiritual connection, in addition to environmental and economic sustainability issues. The challenge for mainstream society is to find ways of living that are more in harmony with the environment and to do so in a way that can be continued into the indefinite future.

With more concern being focused on issues of sustainability, government officials and policy-makers have been holding meetings and setting agendas to determine the elements needed for sustainable development on a large-scale. Eco-community residents are demonstrating, in a very practical way, the elements required for sustainable living on a local and grass roots level. These two methods go hand-in-hand.

Following the gathering of the United Nations at the Earth Summit in 1992, Agenda 21 has been concerned with the development of projects, strategies, and policies that facilitate a shift towards more sustainable modes of environmental, social, and economic development. Chapter 23 of Agenda 21 emphasizes that if sustainable development is to become a part of our social structures, full cultural participation at all levels of society is called for (Reed & Webber, 1995). The Local Government Management Board (LGMB) and local authorities in the United Kingdom have worked together to develop "sustainability indicators" (LGMB, 1995). As a result, 13 primary themes have been identified which encompass a wide range of social, environmental, and economic indicators (Table 1).

As discussed in the literature review, the elements of sustainable development must incorporate social, economic, and environmental concerns. These elements are specifically related to the development of sustainable communities, and are exhibited to a large extent in cohousing and ecovillage communities. In general, these imperatives are

very similar to some of the explicitly stated goals and guiding principles of eco-communities worldwide. There are several countries in the world that are far ahead of Canada in terms of integrating the imperatives of environmental, economic, and social sustainability into their new developments (Global Footprint Network, 2009). However, there are several sustainable community developments in Canada, with the majority of them located in the provinces of British Colombia and Ontario (Fellowship for Intentional Community, 1994). These communities display many of the sustainability indicators outlined above. They are grass roots, local initiatives that have begun their own developments without waiting for the leadership of government officials. They serve as role models for sustainable development and sustainable living.

The results of this study indicate that the eco-communities of B.C. have found ways to incorporate the three imperatives of sustainability (environmental, economic, and social) while retaining a high quality of life emphasizing the value of social capital. How can mainstream society learn from eco-communities in order to incorporate the principles of sustainability into our current ways of life? "The 15 Elements of Ecovillage Living", proposed by Jackson and Svensson (2002) combine the economic and social dimension together, and add another dimension of cultural/spiritual to reflect the idea of a holistic worldview. This worldview brings together science and spirituality, practicality and creativity, and holds both a local and global vision. It is oriented around cooperation and the "good of all" as opposed to individualism and corporate elitism. The bottom line is sustainability and wellness, as opposed to profit. A sustainable conceptualization of wealth, and a more equal distribution of resources will benefit everyone, not just the privileged few. The ecovillage model portrays a balanced and harmonious integration of

many diverse elements. It promotes health and well being on all levels – individual, community, and global.

Social Change

Changing attitudes lead to changing structures. An increased focus on living sustainably within a close-knit community will ultimately lead to new infrastructure being built accordingly. This research indicates that a shift in focus towards elements of social capital and sense of community will be beneficial in terms of maintaining happiness and health during times of change. Cities, regions, and countries that are able to provide a high quality of life with a low Ecological Footprint will be at a tremendous advantage in a resource-constrained future (Ewing et al., 2008).

As increasing numbers of people come to realize the monumental importance of the environment, and voice their concerns to our elected official representatives, it will be the imperative of our democratic government to respond accordingly. The neo-liberal capitalist model upon which our current society is structured continues to fail us (Dawson, 2006). It has resulted in divided societies, environmental destruction, a legacy of climate change and the toxic by-products of industrialism. Democracy can only be attained through a strong local dimension and a 'rounded' accountability approach, in which service providers are in direct dialogue with local citizens who, in turn, have the opportunity to participate in the development of shared open spaces (Stoker, 2004). With the onset of climate change, water shortages, and the predicted energy crisis facing us in the very near future, this cannot happen soon enough.

In retaliation against the negative effects created through the process of globalization, the idea of 'new localism' or "relocalization" has been put forth, which

calls for a change in policy away from centralized systems of decision-making towards local participatory structures (Hines, 2000). The establishment of self-reliant and self-sufficient local communities is one of the most effective means of accounting for the use of our natural environment and for providing appropriate governance systems (Schuman 1998). It is the responsibility of the government to create the framework that allows for its citizens to adopt greener, cleaner lifestyles, sharing the social and ecological benefits across the whole of society. It is the responsibility of individuals to learn how to live lightly on this planet and choose cooperation over conflict. A sustainable, peaceful, and equitable way of living is perhaps our best means of survival beyond the 21st century (Dawson, 2006). Fortunately, there are many communities already in existence that are implementing these ideals. The challenge now is to move the ideas and practices of sustainable living from the fringes of society into the mainstream.

Building sustainable intentional communities seems to be a practical and effective first step available to us at this point in time, towards the day when we have built the mass political movement that will replace the present capitalist order. If we are fortunate, people will adopt the new ways in such large numbers that the old system will be more or less abandoned (Trainer, 2000). However, building eco-villages, rather than fighting against capitalism, is the most sensible thing to do here and now in order to transition from a consumer society to a sustainable society.

The Future of Community

Community building must start with a vision (Dreistadt, 2004). New development must begin with a philosophy, not topography (Simon, 1964). The philosophy must take into considerations factors such as the current physical, social, and economic conditions

of the region. Yet, having a vision is not enough; there must be a specific and practical plan of action in order to make it a reality. The plan must include both physical and social planning in order for community stability and permanence (Simon, 1964). The form and function of physical infrastructure reflects the values of its builders. Eco-communities exhibit physical infrastructure based on permaculture design and sustainability. The nature of these close-knit intentional communities indicates that members join based on shared values, and display a high degree of interpersonal interaction amongst members working towards similar goals, otherwise known as social capital. As numbers of these communities grow, more infrastructure will be built within them to accommodate incoming residents.

The implicit strategy of the ecovillage movement is to simply start building the new post-capitalist society here and now. Gradually, there will be an increase in the number of people who come across from consumer society to live in the new settlements, and an increase in the number of people who practice various elements of permaculture lifestyles. This perspective includes the crucial assumption that it is not necessary or desirable, at least at this point in time, to confront the old system and get rid of it before we can start building the new (Trainer, 2000). The results of this study indicate that what is needed to begin this process is a value system based on respect for each other and the environment.

The most important area for the development of sustainable communities is in the dying country towns and especially the suburbs and neighborhoods of the cities - where most people already live. The biggest challenge we face is how to transfer these existing settlements into highly self-sufficient urban ecovillages. The recommended process

begins with the establishment of a community cooperative of local people, with the long-term goal of pioneering a transition to a sustainable and satisfactory society (Hopkins, 2008). Thus the strategic vision is a very humble beginning centered around a community garden and workshop. This is the first step in a long process towards an increasingly self-sufficient neighborhood economy largely under the control of the local community (Trainer, 2000). Ecovillages and sustainable intentional communities already in place are examples from which to develop other sustainable communities, whether they are rural or urban. These initiatives are started by small groups of enlightened local people who are willing to persevere with little or no official assistance.

The ecovillage and sustainable community movement is one of the most promising revolutionary movements today (Trainer, 2000), and is something that we can all learn from. These eco-communities hold great potential and educational value for the future of community development. Presently, the ecovillage movement provides some of the most relevant knowledge and work available for people transitioning into a more sustainable future. The first step on the path to sustainability is education. There are many things that we can do as individuals to educate ourselves and build a local sustainable community (Slate, 2008). Visit the local cooperative grocery store, support local farmers by joining a CSA program (community supported agriculture), and support local artisans and businesses. Get to know your neighbors, arrange potluck dinners, share childcare, share lawnmowers, cars, and sewing machines. Recycle as much as possible and compost food scraps. Get some exercise by walking to a place you would normally drive. Search the online directory www.ic.org for ecovillages and intentional communities in your area, and contact them to set up a tour. Most importantly, develop compassion for yourself and

for others. Cultivating love in our lives is one of the often unspoken, yet essential elements of any ecovillage's holistic worldview (Slate, 2008). Learning to love oneself and appreciate others is an initial awakening, which acts as a catalyst for healing the human condition. Applied to the eco-community movement, or to any other social grouping, we notice that a community is only as healthy as the individuals that create it (Slate, 2008). Through loving and respecting each other, the environment, and ourselves, together we can move towards a healthier and more sustainable way of living.

Limitations

From the quality of life research, respondents from the international field trial are not representative of the general Canadian population (Skevington, Lofty, & O'Connell, 2004). International quality of life measures will vary due to different cultural circumstances, despite the WHOQOL-BREF being a reliable cross-cultural measure. It is assumed that Canadian quality of life may be different than other national results due to differences in politics, economics, access to health care and education, environmental factors, etc. On a similar note, the eco-communities in this study are not representative of all eco-communities. Although individual members have often lived in other areas of Canada, the eco-communities surveyed are located in British Columbia. Comparing quality of life results from B.C. eco-communities to quality of life results from the international field trial can only be described within that context and cannot be generalized to the Canadian population or other populations. In addition, it is difficult to draw any significant findings from the results of this study, due to the low number of respondents (n = 34), therefore making it difficult to adequately compare these results to the international field trial (n = 11,830).

The survey response rate of 31.2% limits the amount of confidence that we can place in the results of this study – since 68.8% of the target population chose not to respond, there is no way of knowing how much their attitudes vary from those who did respond. In addition, ecovillages are represented by only 10 respondents, and so again there are limits to the amount of value we can place on these responses. It would be interesting to see how these results might change with a larger sample of ecovillage respondents. On a positive note, the respondents that did participate, did so in an excellent manner, with very few missing data. The data collected is adequate to provide an exploratory examination of the relatively recent phenomena of eco-communities in Canada.

The results of this study indicate that eco-communities exhibit a lower importance placed on built capital, and a higher emphasis placed on both social and natural capital. The relationship between these values and quality of life, however, is yet to be determined scientifically. Yet it is worth mentioning that eco-community respondents did report a higher quality of life than the comparative group, and this portrays a similar trend as that found in Mulder, Costanza, and Erickson's (2005) study. Although eco-community residents report a high quality of life and value the importance of social capital over other types of capital, this study does not confirm a cause-and-effect relationship between these two variables.

<center>*Suggestions for Future Research*</center>

Results from this study can be used in future research to highlight and pinpoint areas needing further analysis. In this regard, future research will be useful in order to investigate more specific lines of inquiry, and to generate results that can be compared to

control groups in non-intentional communities. For example, quality of life can be compared to Canadian general population data when it becomes available. For the Community Questionnaire, this version of the test would have to be administered to a control group from the general population in order to compare results. From this, causal-comparative data analysis can be carried out. Further areas of analysis could include drawing correlations between certain domains of quality of life for their influence on overall quality of life. For example, to what extent does the domain of Environment impact overall quality of life scores? Another line of inquiry involves measuring the strength of the correlation between social capital measures and quality of life.

Future research could potentially involve a more in-depth qualitative design in order to explore the various elements of ecovillage living. An especially interesting line of inquiry would revolve around conflict resolution strategies/tactics being implemented in intentional communities. Another avenue of exploration could be the effectiveness of collective decision-making strategies. A grounded theory approach could explore the personality factors, attitudes, and beliefs of eco-community members. Guidelines for sustainable development and sustainable living could be drawn up from key interviews. This data could be combined with other research aimed at the general population, investigating attitudes and practices surrounding sustainability issues. Limiting factors and blocks to supporting sustainable living practices could be elucidated at the individual and organizational levels. Educational tools could be developed from this combined knowledge, creating the support and resources necessary to empower the people.

A quantitative investigation of worldwide ecovillages and sustainable communities could be used to compare the levels of cognitive and structural social capital

in place at these settlements. From this, common elements could be used as building blocks for future community developments. Urban city planners can incorporate ecovillage design and building techniques, along with the cohousing emphasis on sense of community, into their new blueprints. Individual community members can begin to organize local initiatives with the intention of incorporating sustainability into their everyday lives.

Conclusion

The results of this study indicate that eco-communities are able to provide their residents with a high quality of life while living in environmentally sustainable ways. They are able to consume less material resources without suffering from a reduced quality of life. As proposed by Mulder, Constanza, and Erickson (2005), and also reflected in the results of this study, the way this may be accomplished is through a higher value placed on social and natural capital, as opposed to built capital. In other words, healthy interactions with people and the environment are considered a priority over having access to material goods. This benefits not only the environment and communities, but also individuals by enhancing psychological sense of community and subjective emotional well being – which are both aspects of mental wellness. In addition, the eco-communities in this study display high levels of solidarity, trust, and conflict resolution strategies – indicating they have the necessary building blocks for a strong community that has the ability to last over time. The significant majority of eco-community respondents claim that these three dimensions exist more often in their communities than compared to other non-eco-communities they have lived in. Overall, the eco-communities in this study have demonstrated high degrees of social capital,

representing an importance placed on interactions between community members, as well as having a foundation in place that will help to build a strong and sustainable community that will last over time.

Eco-communities serve as models on which to plan and build future communities. Urban neighborhoods and suburbs, along with existing towns and villages all have the opportunity to transition into more sustainable modes of development, lifestyle, and worldview. If based on these principles, all communities have the opportunity to become intentional. The intention will be to increase environmental consciousness and sustainable living practices, as well as to increase the value placed on interactions with neighbors and fellow community members. By shifting attitudes away from merely economic concerns and built capital, individuals may be able to experience increased emotional well-being and psychological sense of community; and communities may be able to offer residents a strong base of social capital, along with an improved quality of life for each and every individual who is willing to contribute back to the community.

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Appendix A

Human Subjects Research Ethics Approval Letter

The University of Lethbridge

MEMORANDUM

TO: Nadine Duckworth
FROM: Rick Mrazek
Date: May 27, 2008

RE: Human Subject Research Application:
"Quality of Life and Social Capital in Ecovillages: Building Sustainable Intentional Communities"

The Faculty of Education Human Subject Committee has **approved** your HSR application.

The approval adheres to the tri-university council guidelines, published on the website www.nserc.ca/programs/ethics/english/index.htm.

Good luck with your research.

Rick Mrazek, Ph.D.
Chair Human Subject Committee
Faculty of Education

Cc: Graduate Studies
          Rick Mrazek

Appendix B

Permission to Use Assessment Instruments

Subject: Re: Fw: SOCAT instrument, the World Bank website
From: mrevzina@worldbank.org
Date: Mon, April 28, 2008 9:05 am
To: "Nadine Duckworth" <nadine.duckworth2@uleth.ca>
Priority: Normal
Options: View Full Header | View Printable Version | Download this as a file| Add
to Addressbook

Dear Nadine Duckworth,

Thank you for your interest in the World Bank publications. Permission to use
the SOCAT instrument for your research study only is hereby granted free of
charge. Please acknowledge the World Bank as the source of the information.
Kindly provide your mailing address for our records.

Best regards,

Mayya

Mayya Revzina
Rights & Permissions
Office of the Publisher
The World Bank
1818 H Street NW, Washington DC 20433, USA
e-mail: mrevzina@worldbank.org
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Seattle Quality of Life Group
University of Washington

146 N Canal Street, Suite 313
Seattle Washington, 98103
Phone: (206) 543-9932
Fax: (206) 616-3135

April 8, 2008

Nadine Duckworth
University of Lethbridge
74- 2300 13 St. N
Lethbridge, AB, Canada TIH 4E8

Dear Ms. Duckworth:

Thank you for your order of the WHOQOL instrument. Electronic files of the WHOQOL User's Manual, WHOQOL-100 and WHOQOL-BREF instruments, and the scoring information have been sent to you.

If you have any further questions about the manual or the instruments, please contact us at the mailing address and phone number above or via e-mail at seaqol@u.washington.edu. For general questions, or for more information about the SEAQOL group, please see our website at www.seaqolgroup.org.

Sincerely,

_____
Anne Skalicky, MPH
Instrument Coordinator
Department of Health Services
Seattle Quality of Life Group
146 N Canal ST, Suite 313
Seattle, WA 98103

Telephone Number: 206-616-6977
Fax Number: 206-616-3135
E-mail: skalicky@u.washington.edu

Appendix C

Email Request Script

Hello,

My name is Nadine Duckworth. I am a Master's student at the University of Lethbridge, Alberta. I am conducting a research project called "Quality of Life and Social Capital in Sustainable Intentional Communities". This study has been funded by the Social Sciences and Humanities Research Council of Canada (SSHRC).

For this research, I am contacting B.C. intentional communities that have demonstrated environmentally sustainable living practices in order to find volunteers to fill out a short questionnaire about their experiences living there. The questions ask about members' quality of life (including happiness and health), and sense of community (including trust and cooperation, solidarity, and conflict resolution). The survey will only take about half an hour to complete. The results will be used to complete my Master's thesis in Counselling Psychology at the University of Lethbridge.

I consider this to be important research, and I'm hoping to find support for the idea that people living in eco-communities find it to be a satisfying experience, and that sustainable living practices can be extended to the rest of society in general. This study will raise awareness about the existence of eco-communities, and the characteristics of sustainable living practices. My hypothesis is that people can live in environmentally-sustainable ways while retaining a high quality of life. May I please mail you some surveys in case anyone at your community would like to participate? If yes, approximately how many adults would consider themselves to be residents or members of your community? This can include people who aren't living there at the moment, but

who have lived there at some point, or plan to in the future, and still consider themselves to be members of the community.

Please email me your mailing address for me to send the surveys to you. I will include self-addressed stamped envelopes for the completed surveys to be mailed back to me, along with a signed letter of informed consent which will also be provided in the package. The informed consent will describe the study in detail, and requires that volunteers sign it to say they understand and agree to what they're doing. Please email me, or call me at (403) 634-6609, to let me know if you or anyone there is interested in making a valuable contribution to society by participating in this study. Your response will be greatly appreciated. Thank you very much for your time and consideration.

Sincerely,

Nadine Duckworth

Appendix D

Survey Poster

Community Questionnaire

Do you consider yourself to be a member or resident of this ecovillage/intentional community?

Are you interested in contributing to research that will help to raise the public's awareness of ecovillages, intentional communities, and sustainable living practices?

Please consider filling out this questionnaire.
Your help would be of tremendous value.

Surveys due October 30, 2008

- Printed using recycled paper
- Addressed and stamped envelope provided for your convenience

Appendix E

Participant Informed Consent Form

PARTICIPANT (ADULT) CONSENT FORM

Dear ecovillage resident or community member,

You are being invited to participate in a study entitled, "Quality of Life and Social Capital in Sustainable Intentional Communities." This research study is being conducted by Nadine Duckworth, a graduate student in the Faculty of Education at the University of Lethbridge, Alberta. You may contact her if you have any questions by phoning: (403) 634-6609, or emailing: nadine.duckworth2@uleth.ca. As a graduate student, I am required to conduct research as part of the requirements for a degree in Master of Education, Counselling Psychology. This research is being conducted under the supervision of Dr. Rick Mrazek. You may contact my supervisor at (403) 329-2452.

The purpose of this research project is to help raise awareness about new ways of living that retain a high Quality Of Life (QOL) while consuming fewer resources. Since ecovillages have demonstrated sustainable living practices, I would like to investigate if their QOL is comparable to those living in the rest of society in general. Along with measures of QOL, I would like to investigate the degree of Cognitive Social Capital (CSC) among ecovillage residents. Social capital is similar to the concept of "sense of community", and it is one of the predictors of a strong community that will last over time (Grootaert & Van Bastelaer, 2002). Social Capital and Quality of Life are both indicators of well-being in general (Perkins and Long, 2002). From these measures, it can be determined if residents of ecovillages are able to maintain a high QOL and well-being,

while living in a way that is less reliant on energy consumption. For these reasons, ecovillages could be seen as demonstrating sustainable living practices, as well as being sustainable as communities of the future.

Research of this type is important because the information gathered will be able to shed light on contemporary society's way of living and interacting. From the ecovillage model, we may be able to incorporate more sustainable ways of living into current society without having to suffer from a reduced QOL.

Your community has been selected for this study because it has demonstrated environmentally-sustainable living practices that are characteristic of "ecovillages". Volunteers for this study must be 18 years of age or older, and must consider themselves to be residents or community members of the eco-community. Information from volunteers who have met these criteria, signed the informed consent, and fully completed the questionnaires will be included in the study.

If you agree to voluntarily participate in this research, it is asked that you complete the attached survey, which consists of two sections. The first section, called the "Community Questionnaire", will ask for information about yourself and your community, as well as information about aspects of solidarity, trust and cooperation, and conflict resolution within your community. The second section, called the "WHOQOL-BREF" concerns your Quality of Life, and asks for information about various aspects of your physical health, psychological health, social relationships, environment, and overall well-being. The results will indicate the sense of community and quality of life that you have experienced as a resident/member of this eco-community.

Participation in this study may cause some inconvenience to you, since it will take approximately half an hour of your time to complete the questionnaires. It is possible that you may be socially pressured to answer in a specific way by fellow community members. This can be avoided by filling out the questionnaires alone and in a private manner. Answers should reflect your personal and honest feelings/thoughts. If harmful side effects result, participants can contact the researcher to be referred to a counselling agency in a nearby town/city. By signing the informed consent, participants agree to this arrangement. On the other hand, a potential benefit from participating in this research is the personal satisfaction that may result from assisting the researcher to increase public awareness of the existence and characteristics of ecovillages, along with an increased awareness of sustainable living practices.

As a way to compensate you for any inconvenience related to your participation, once the study has been completed, the researcher will report the results to each participating ecovillage by written letter. It is important for you to know that it is unethical to provide any undue compensation to research participants and, if you agree to be a participant in this study, this form of compensation to you must not be coercive. If you would not otherwise choose to participate if the compensation was not offered, then you should decline.

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. If you decide to withdraw from the study, your data will not be used in the final analysis of the results. Once participants have mailed the completed questionnaire, it will no longer be possible to withdraw from the study, since the researcher will have no

way of identifying which questionnaire belongs to which participant. Participants have until the last day of October to complete the questionnaires, along with the signed letter of consent, and return them by mail in the enclosed self-addressed, stamped envelope.

In terms of protecting your anonymity, personally identifying information is unnecessary in this study, and you will not be required to provide your name. Your confidentiality and the confidentiality of the data will be protected by the researcher, who will keep the questionnaires in a locked filing cabinet in her personal home office. The results will be reported on a community, not individual, basis. Therefore, your individual response will be combined with the responses from other members of your community, in order to present an overall picture of your eco-community. As per standard practice, all questionnaires will be destroyed by shredding five years after the study has been completed. Results from this study will be used in the researcher's Master's degree thesis, and may be submitted for publication in various scholarly journals.

In addition to being able to contact the researcher at the above phone numbers, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Chair of the Faculty of Education Human Subjects Research Committee, Dr. Rick Mrazek, at the University of Lethbridge (403-329-2425). Your signature below indicates that you understand the above conditions of participation in this study and that you have had the opportunity to have your questions answered by the researcher, if desired.

Name of Participant	*Signature*	*Date*

One copy of this consent form will be kept by you, and one copy must be returned to the researcher along with the completed questionnaires. The researcher has provided a self-addressed envelope to mail them in.

Appendix F

Survey Package (WHOQOL-BREF and Community Questionnaire)

This survey consists of two parts:

1. WHOQOL-BREF – World Health Organization Quality of Life Survey

2. Community Questionnaire – The World Bank Social Capital Assessment Tool – adapted version

WHOQOL-BREF

About You

Before you begin we would like to ask you to answer a few general questions about yourself by circling the correct answer or by filling in the space provided.

1. What is your gender?   Male   Female

2. What is your date of birth?   _____ / _____ / _____
                                               Day   Month   Year

3. What is the highest education you received?

    None at all
    Elementary School
    High School
    College

4. What is your marital status?

    Single   Separated
    Married   Divorced
    Living as Married   Widowed

5. Are you currently ill?   Yes   No

6. If something is wrong with your health, what do you think it is?

    illness/problem

    _____

Instructions

This questionnaire asks how you feel about your quality of life, health, or other areas of your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks. For example, thinking about the last two weeks, a question might ask:

		(Please circle the number)				
For office use		**Not at all**	**A little**	**Moderately**	**Mostly**	**Completely**
	Do you get the kind of support from others that you need?	1	2	3	4	5

You should circle the number that best fits how much support you got from others over the last two weeks. So you would circle the number 4 if you got a great deal of support from others.

		(Please circle the number)				
For office use		**Not at all**	**A little**	**Moderately**	**Mostly**	**Completely**
	Do you get the kind of support from others that you need?	1	2	3	4	◯ 5

You would circle number 1 if you did not get any of the support that you needed from others in the last two weeks.

		(Please circle the number)				
For office use		**Not at all**	**A little**	**Moderately**	**Mostly**	**Completely**
	Do you get the kind of support from others that you need?	1 ◯	2	3	4	5

Please read each question, assess your feelings, and circle the number on the scale that gives the best answer for you for each question.

For office use		*(Please circle the number)*				
		Very poor	**Poor**	**Neither poor nor good**	**Good**	**Very Good**
G1 / G1.1	1. How would you rate your quality of life?	**1**	**2**	**3**	**4**	**5**

For office use		*(Please circle the number)*				
		Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**
G4 / G2.3	2. How satisfied are you with your health?	**1**	**2**	**3**	**4**	**5**

The following questions ask about **how much** you have experienced certain things in the last two weeks.

For office use		*(Please circle the number)*				
		Not at all	**A little**	**A moderate amount**	**Very much**	**An extreme amount**
F1.4 / F1.2.5	3. To what extent do you feel that physical pain prevents you from doing what you need to do?	**1**	**2**	**3**	**4**	**5**
F11.3 / F13.1.4	4. How much do you need any medical treatment to function in your daily life?	**1**	**2**	**3**	**4**	**5**
F4.1 / F6.1.2	5. How much do you enjoy life?	**1**	**2**	**3**	**4**	**5**
F24.2 / F29.1.3	6. To what extent do you feel your life to be meaningful?	**1**	**2**	**3**	**4**	**5**

For office use		*(Please circle the number)*				
		Not at all	**Slightly**	**A Moderate amount**	**Very much**	**Extremely**
F5.2 / F7.1.6	7. How well are you able to concentrate?	1	2	3	4	5
F16.1 / F20.1.2	8. How safe do you feel in your daily life?	1	2	3	4	5
F22.1 / F27.1.2	9. How healthy is your physical environment?	1	2	3	4	5

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

For office use		*(Please circle the number)*				
		Not at all	**A little**	**Moderately**	**Mostly**	**Completely**
F2.1 / F2.1.1	10. Do you have enough energy for everyday life?	1	2	3	4	5
F7.1 / F9.1.2	11. Are you able to accept your bodily appearance?	1	2	3	4	5
F18.1 / F23.1.1	12. Have you enough money to meet your needs?	1	2	3	4	5
F20.1 / F25.1.1	13. How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
F21.1 / F26.1.2	14. To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

For office use		(Please circle the number)				
		Very poor	**Poor**	**Neither poor nor well**	**Well**	**Very well**
F9.1 / F11.1.1	15. How well are you able to get around?	1	2	3	4	5

The following questions ask you to say how **good** or **satisfied** you have felt about various aspects of your life over the last two weeks.

For office use		(Please circle the number)				
		Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**
F3.3 / F4.2.2	16. How satisfied are you with your sleep?	1	2	3	4	5
F10.3 / F12.2.3	17. How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
F12.4 / F16.2.1	18. How satisfied are you with your capacity for work?	1	2	3	4	5
F6.4 / F8.2.2	19. How satisfied are you with your abilities?	1	2	3	4	5
F13.3 / F17.2.3	20. How satisfied are you with your personal relationships?	1	2	3	4	5
F15.3 / F3.2.1	21. How satisfied are you with your sex life?	1	2	3	4	5
F14.4 / F18.2.5	22. How satisfied are you with the support you get from your friends?	1	2	3	4	5
F17.3 / F21.2.2	23. How satisfied are you with the conditions of your living place?	1	2	3	4	5

For office use		(Please circle the number)				
		Very dissatisfied	**Dissatisfied**	**Neither satisfied nor dissatisfied**	**Satisfied**	**Very satisfied**
F19.3 / F24.2.1	24. How satisfied are you with your access to health services?	**1**	**2**	**3**	**4**	**5**
F.23.3 / F28.2.2	25. How satisfied are you with your mode of transportation?	**1**	**2**	**3**	**4**	**5**

The follow question refers to **how often** you have felt or experienced certain things in the last two weeks.

For office use		(Please circle the number)				
		Never	**Seldom**	**Quite often**	**Very often**	**Always**
F8.1 / F10.1.2	26. How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	**1**	**2**	**3**	**4**	**5**

Did someone help you to fill out this form?   Yes   No
(Please circle Yes or No)

How long did it take to fill out this form?

_____

THANK YOU FOR YOUR HELP

QuickTime™ and a
decompressor
are needed to see this picture.

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